ORDER NO.VM0509039CE

Service Manual

Digital Video Camera/Recorder

Panasonic Mini DV PAL

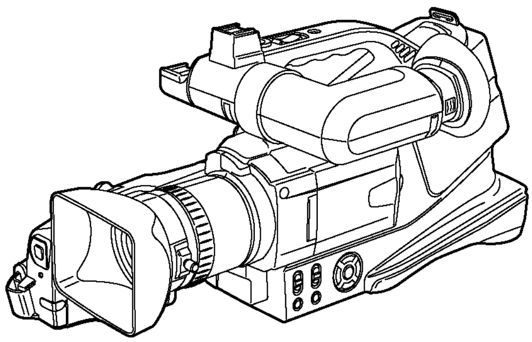
NV-MD10000GC
NV-MD10000GK

VOL.1

A-MECHANISM

Colour

(K)....................Black Type



Panasonic®

TABLE OF CONTENTS

1 Safety Precaution

1.1. General Guidelines

1. IMPORTANT SAFETY NOTICE
   There are special components used in this equipment which are important for safety. These parts are marked by (!) in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. It a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.1.2. Leakage current hot check (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect "A" to exposed metallic part on the set. And connect "B" to a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

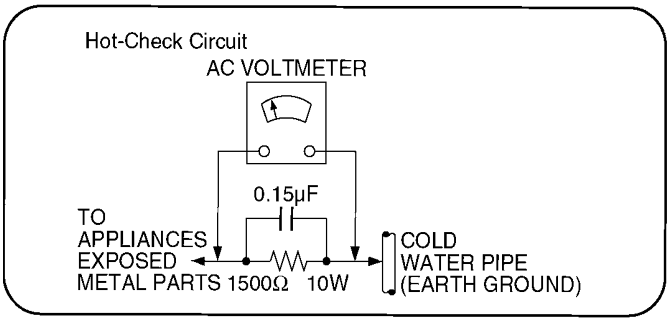


Figure 1

2 Warning

2.1. Caution for AC Cord (VJA0940 type)

2.1.1. Information for your safety

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

2.1.2. Caution for AC mains lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362
Check for the ASRA mark or the BSI mark on the body of the fuse.

ASTA mark	BSI mark

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safety.
There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

2.1.2.1. Important

The wires in this mains lead are coloured in accordance with the following code:

Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

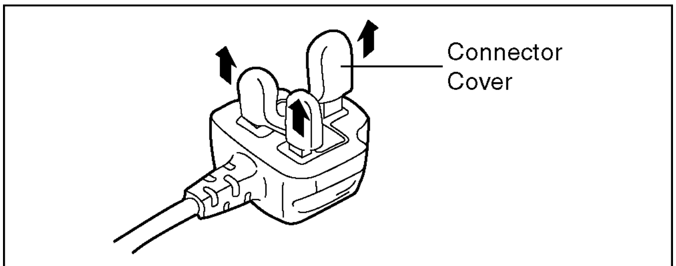
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.

Earth Symbol	⏚

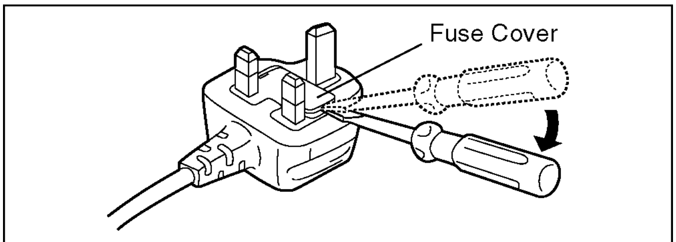
2.1.2.2. Before use

remove the Connector Cover as follows.

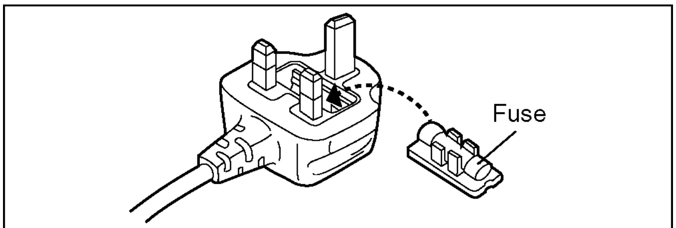


2.1.2.3. How to replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



2.2. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as “antistatic (ESD protected)” can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION:
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2.3. Handling the Lead-free Solder

2.3.1. About lead free solder (PbF)

Distinction of PbF PCB:
PCBs (manufactured) using lead free solder will have a PbF stamp or printing on the PCB.
(Please refer to figures.)

CAUTION:

- **Pb free solder has a higher melting point than standard solder;**
  Typically the melting point is 50 °F - 70 °F (30 °C - 40 °C) higher.
  Please use a soldering iron with temperature control and adjust it to 700 °F±20 °F (370 °C± 10 °C).
  In case of using high temperature soldering iron, please be carefull not to heat too long.
- **Pb free solder will tend to splash when heated too high (about 1100 °F/600 °C).**
- **All products with the printed circuit board with PbF stamp or printing must be serviced with lead free solder.**
  When soldering or unsoldering, completely remove all of the solder from the pins or solder area,
  and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations
Recommended lead free solder composition is Sn96.5 Ag3.0 Cu0.5.

2.4. How to Replace the Lithium Battery (PROCEDURE)

1. Remove the Mother C.B.A.. (Refer to Disassembly Procedures.)
2. Unsolder the Lithium Battery “ML-621S/F9D” and then replace the new one. (See Figure B1.)
3. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

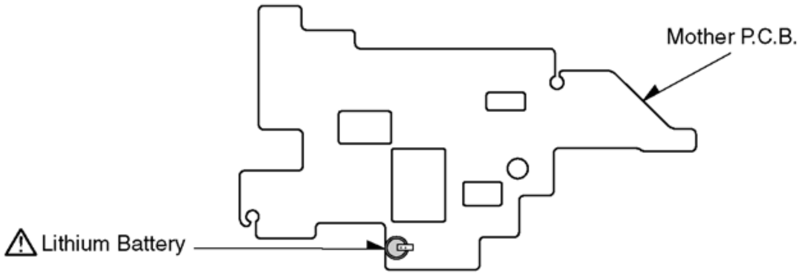


Fig. B1

Note:

The lithium battery is a critical component. (Type No.: ML-621S/F9D)
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

PRECAUTION

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

VORSICHT

Bei einer falsch eingesetzten Batterie besteht Explosionsgefahr. Nur mit einer vom Hersteller empfohlenen Batterie vom gleichen Typ ersetzen.
Verbrauchte Batterien beim Fachhändler oder einer Sammelstelle für Sonderstoffe abliefern.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning má kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

CAUTION

The battery used in this device may present a risk of fire or chemical burn if mistreated.
Do not recharfe, disassemble, heat above 100 °C (212 °F), or incinerate.
Replace battery with Panasonic part nmber ML-621S/F9D only.
Use of another battery may present a risk of fire or explosion.
Dispose of used battery promptly.
Keep away from children.
Do not disassemble and do not dispose of in fire.

3 Service Navigation

3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

Note 1:

These movie camera uses AC Adaptor VSK0644.

Note 2:

1) This service manual does not contain the following information, because of the impossibility of sevicing at component level.

1. Schematic Diagram, Block Diagram and P.C.B. layout of Main P.C.B./Mother P.C.B.
2. Parts List for individual parts of Main P.C.B./Mother P.C.B.

2) The following category are recycle module part. Please send them to Central Repair Center.

*Main P.C.B. (VEP03G83A)
*Mother P.C.B. (VEP08344A)

When a part replacement is required for repairing each Main P.C.B. and/or Mother P.C.B., replace the assembly parts.
(Main P.C.B. and/or Mother P.C.B.)
The following circuits are contained in Main P.C.B.

1. Main Connection Circuit
2. Camera Circuit
3. LCD Circuit
4. Lens Drive Circuit
5. AVIO Circuit
6. MIC/IR Circuit
7. Video Circuit
8. Power Circuit
9. Control Circuit

The following circuit is contained in Mother P.C.B..

1. Mother Circuit

3.2. Service Caution

3.2.1. EEPROM data for spare parts of the Main P.C.B.

When the Main P.C.B. is replaced, the fixed and average data must be changed by Tatsujin kit according to the Movie Camera’s suffix.
Then, confirm and/or adjust the VTR and Camera section one by one.

4 Specifications

Digital Video Camera / Recoder

ITEM	SPECIFICATION
POWER	Source: DC 7.9 / 7.2 V Consumption: Recording 3.0 W (When using Viewfinder) 3.3 W (When using LCD Monitor)
RECORDING FORMAT	Mini DV (Consumer-use Digital Video SD Format)
TAPE USED	6.35 mm digital video tape
RECORDING / PLAYBACK TIME	SP mode: 80 min. with DVM80 LP mode: 120 min. with DVM80
CAMERA	Filter Diameter: 43.0 mm
	Zoom: 10:1 Power Zoom
	Monitor: 2.5-inch LCD
	Lens: Auto Iris, F1.8, Focal Length; 2.45 - 24.5 mm Macro (Full Range AF)
	Image Sensor: 1/6-inch 3CCD Image Sensor
	Viewfinder: Colour Electronic Viewfinder
VIDEO	Recording System: Digital Component
	Television System: CCIR; 625 Lines, 50 Fields PAL Colour Signal
	Video Output Level: 1.0 Vp-p 75 ohm S-Video Output Level: Y Output; 1.0 Vp-p 75 ohm C Output; 0.3 Vp-p 75 ohm
AUDIO	Recording System: PCM Digital Recording 16 bit (48 kHz/2 ch) 12 bit (32 kHz/4 ch)
	Audio Output Level (Line): 316 mV, 600 ohm Mic Input: Mic sensitivity -50dB(0dB=1V/Pa,1kHz) (Stereo Mini Jack)

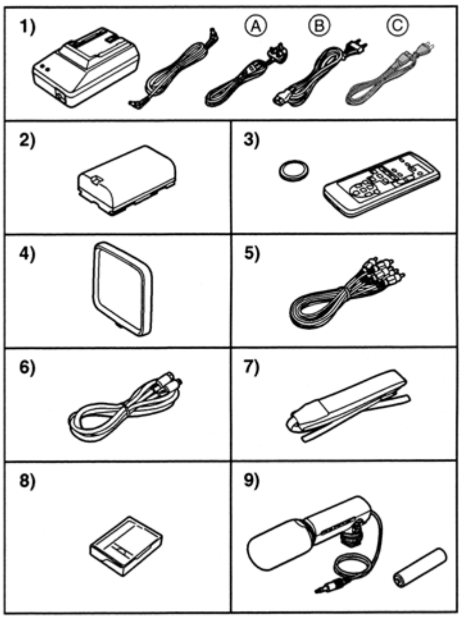
ITEM	SPECIFICATION
STANDARD ILLUMINATION	1,400 lx
MINIMUM REQUIRED ILLUMINATION	1 lx (Colour Night View Mode)
DIGITAL INTERFACE	DV Input/Output Terminal (IEEE1394, 4-pin)
MICROPHONE	Stereo (with a zoom function)
SPEAKER	1 round speaker ϕ20 mm
OPERATING TEMPERATURE	0 - 40 °C
OPERATING HUMIDITY	10 - 80 %
WEIGHT	Approx. 2000 g (without supplide Battery, DV cassette and lens cap) Approx. 2120 g (with supplide Battery, DV cassette and lens cap)
DIMENSIONS	Approx. 216 (W) × 225 (H) × 432 (D) mm
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack Unit 1 pc. DC Cable 1 pc. AC Cord (NV-MD10000GK) 2 pcs. AC Cord (NV-MD10000GC) 1 pc. AV Cable 1 pc. S-Video Cable 1 pc. Remote Controller 1 pc. Bottom-type Battery 1 pc. Head Cleaner 1 pc. Shoulder Belt 1 pc. External stereo Microphone 1 pc. Hood Cap Unit
SOLDER	This model use lead free solder (PbF).

Weight and dimensions are approximate values.
Specifications may change without prior notice.

5 Location of Controls and Components

Accessories

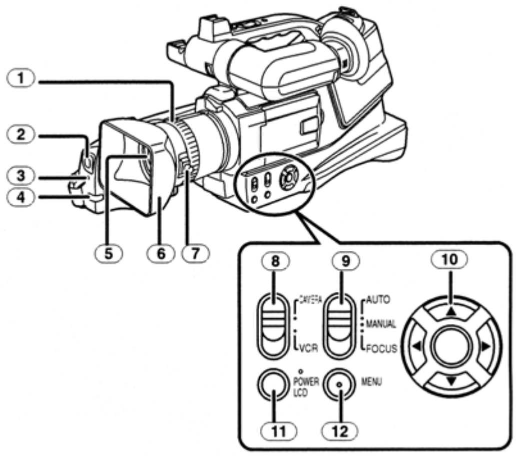
The followings are the accessories supplied with this product.



1) **AC adaptor, DC input lead, AC mains lead**
   Ⓐ : NV-MD10000GC only
   Ⓑ : NV-MD10000GC only
   Ⓒ : NV-MD10000GK only
2) **Battery pack**
3) **Remote control, button-type battery**
4) **Lens cap**
5) **AV cable**
6) **S-Video cable**
7) **Shoulder strap**
8) **Digital video head cleaner**
9) **External Stereo Microphone and Battery**

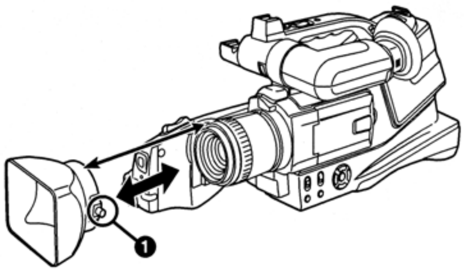
Parts identification and handling

■ **Camera**

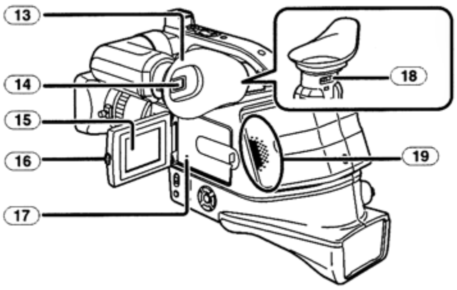


(1) **Focus ring**
(2) **White balance sensor**
(3) **Recording lamp**
(4) **Remote control sensor**
(5) **Lens**
(6) **Lens hood**
(7) **Lens hood attachment knob**

- When you attach the Lens Hood back, unite the marks and fasten the Lens Hood Attachment knob ❶.



(8) **Mode switch**
(9) **Mode selector switch [AUTO/MANUAL/FOCUS]**
(10) **Cursor buttons**
[ENTER] button
▲/Playback/Pause button [▶/❚❚]
◀/Rewind/Review button [◀◀]
▼/Stop button [■]
▶/Fast forward/cue button [▶▶]
(11) **Power LCD button [POWER LCD]**
Power LCD lamp
(12) **Menu button [MENU]**



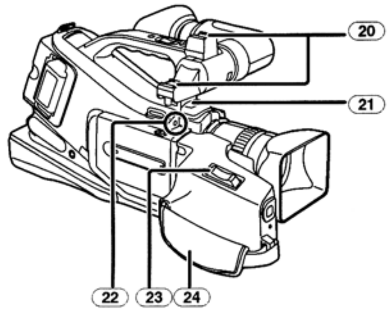
(13) **Eyecup**
(14) **Viewfinder**

> Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the Viewfinder screen. However, this is not a malfunction and does not affect the recorded picture.

(15) **LCD monitor**

> Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD monitor screen. However, this is not a malfunction and does not affect the recorded picture.

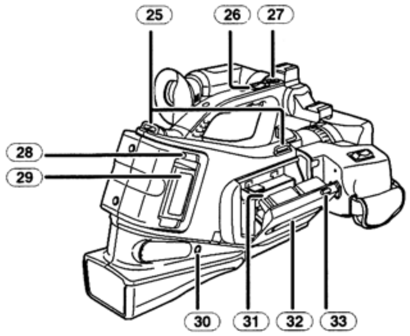
(16) **LCD monitor open button [PUSH OPEN]**
(17) **Reset button**
(18) **Eyepiece corrector knob**
(19) **Speaker**



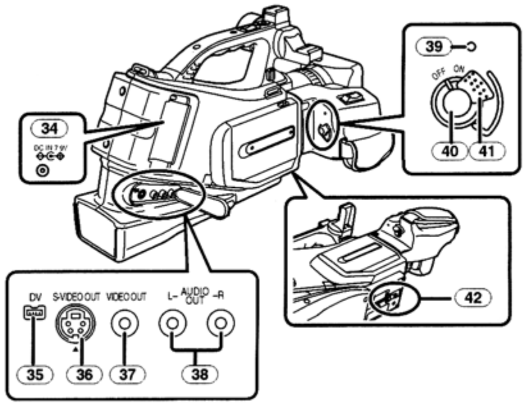
(20) **Smart accessory shoes**
- The External Stereo Microphone (supplied), etc. can be attached here.

(21) **Microphone (built-in, stereo)**
(22) **External microphone socket [EXT MIC]**
- Connect with an external microphone or audio equipment. (When this socket is in use, the built-in microphone does not operate.)

(23) **Zoom lever [W/T]**
(24) **Grip belt**



(25) **Shoulder strap holders**
(26) **Sub zoom lever [W/T]**
(27) **Sub recording start/stop button**
(28) **Battery eject button [PUSH]**
(29) **Battery holder**
(30) **Headphone socket [PHONES]**
(31) **Cassette holder**
(32) **Cassette compartment cover**
(33) **Cassette eject lever [OPEN/EJECT]**



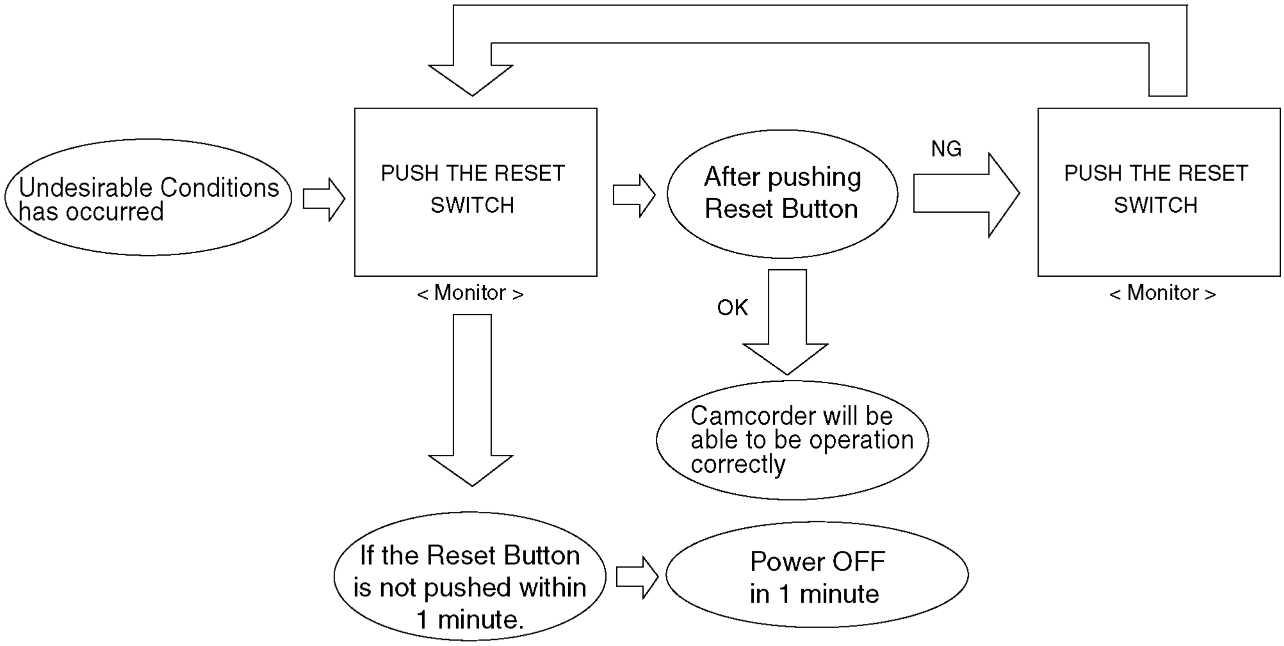
(34) **DC Input socket [DC IN]**
(35) **DV terminal [DV]**
- Connect this to the digital video equipment.

(36) **S-Video output socket [S-VIDEO OUT]**
(37) **Video output socket [VIDEO OUT]**
(38) **Audio output sockets [AUDIO OUT]**
(39) **Power lamp**
(40) **Recording start/stop button**
(41) **Off/On switch [OFF/ON]**
(42) **Tripod receptacle**
- Used for mounting the movie camera on an optional tripod.

6 Service Mode

6.1. Error Display

"PUSH THE RESET SWITCH" is displayed automatically on the EVF or the LCD Monitor when an undesirable condition has occured.



Note:

When "PUSH THE RESET SWITCH" is displayed repeatedly, required.
Check the Error Code which is listed in the Service Menu.

6.2. Service Menu

When abnormal detection contents are confirmed a When I do the following operation automatic diagnosis cord is displayed.

1. Preparation
   Remove the tape from this machine.
2. Service menu is dieplayed. (see Fig. S1)
   Pushed [CURSOR DOWN ▼] button and [SURSOR LEFT ◀] button and [AUTO/MANUAL/FOCUS switch to FOCUS] button simmultaneously for 3 seconds.
3. Operating automatic diagnosis cord is displayed.
   Item [3] is selected with the [CURSOR UP or DOWN ▲/▼] button.
   [NO] is selected with the [CURSOR RIGHT ▶] button.
   [YES] is selected with the [CURSOR UP or DOWN ▲/▼] button.
   Press the [CURSOR CENTER] button.

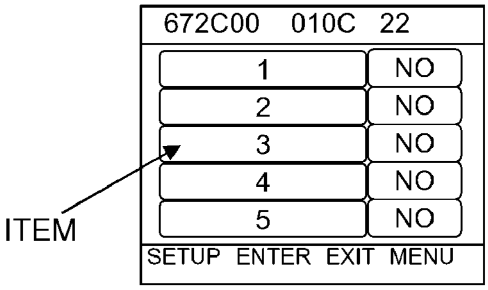
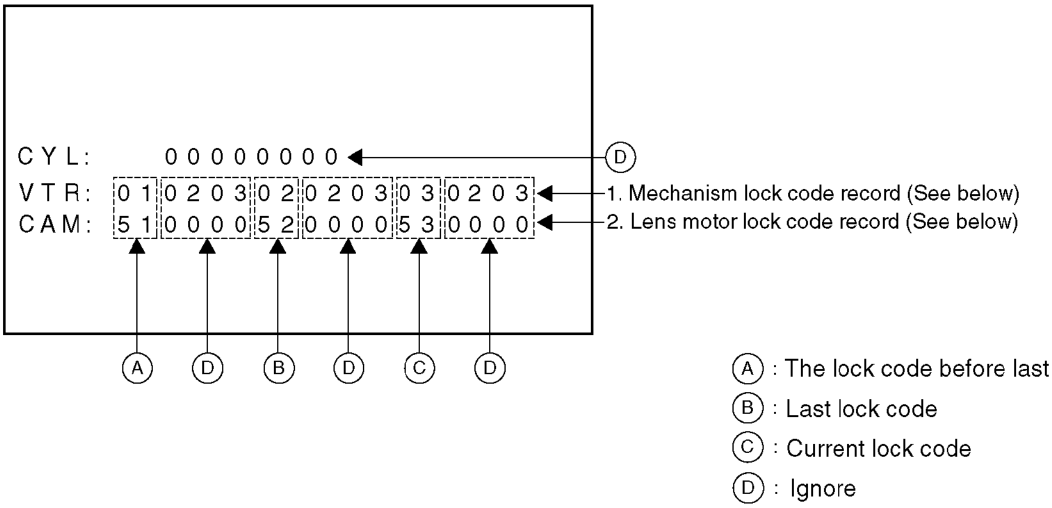


Fig. S1

NOTE:
Do not operate items Except for 3 in the Service Menu.

Self diagnosis cord contents are as follows.



Display contents (self diagnosis cord contents)

Mechanism & Lens motor lock code

DISPLAY	CONDITION
01	T-REEL LOCK
02	S-REEL LOCK
03	UNLOADING LOCK
04	LOADING LOCK
05	CYLINDER
51	ZOOM MOTOR LOCK
52	FOCUS MOTOR LOCK

Turn off the power supply after confirmation.
Please do the error cord backup record the clear after repair completion.

CLEAR METHOD

If the Tape inserted, take out it before Service Mode operation.

Making the mode dial of This Machine a tape recording mode, push [CURSOR LEFT ◀] button and [AUTO/MANUAL/FOCUS switch to FOCUS] button and [RECORDING START/STOP] button simultaneously for 3 seconds.

7 Service Fixture & Tools

7.1. Service Extension Cables

Parts Name	Parts No.	Pin	Description			Q'ty	Remarks
Flat Cable	VFK1453	40	PS6417 (Mother)	-	PP6501 (Prism Unit)	1	as NV-DS7
Flat Cable	VFK1442	21	FP6401 (Mother)	-	Lens Unit	1	as NV-DS7
Flat Cable	VFK1465	5	FP6404 (Mother)	-	MF Unit	1	as NV-DS5

7.2. Service Tools and Equipment

Parts Name	Parts No.	Q'ty	Remarks
DV Camcorder	---	1	The Camcorder being adjusted.
Personnel Computer	---	1	With Tatsujin Software.
AC Adaptor	---	2	The AC Adaptor for DV Camcorder. The AC Adaptor for M. Board.
DC output Cable	--- VJA0941	2	The AC Adaptor for DV Camcorder. The AC Adaptor for M. Board.
232C (M3.5) I/F Cable	VFK1395	1	
Measuring Board	VFK1308E	1	
30 pin Flat Cable	VFK1317	2	
Step Up Ring	VFK1164TAR43	1	For Collimator 43mm
Connection Board	VFK1309	1	
Connection Adaptor (60-20pin)	VFK1897	1	
TATSUJIN PC-Adjustment Program	VF0D2003AV30	1	

8 Disassembly and Assembly Instructions

8.1. Disassembly Frow Chart

This flow chart indicates the disassembly steps the cabinet parts, P.C.B. and Mecha. Unit in order to access to be serviced. When reinstalling, perform the steps in the reverse order.

1 Side Case (R) Unit

2 Lens Unit	6 Handle / EVF Unit	9 Zoom P.C.B.	12 AV Jack P.C.B.	14 LCD Unit
3 Mother P.C.B.	7 EVF Int P.C.B.	10 Front P.C.B.	13 Battery Int P.C.B.	15 Monitor P.C.B.
4 Main P.C.B.	8 EVF P.C.B.	11 S/S Power P.C.B.		
5 Mecha Unit				

8.2. P.C.B. Layout

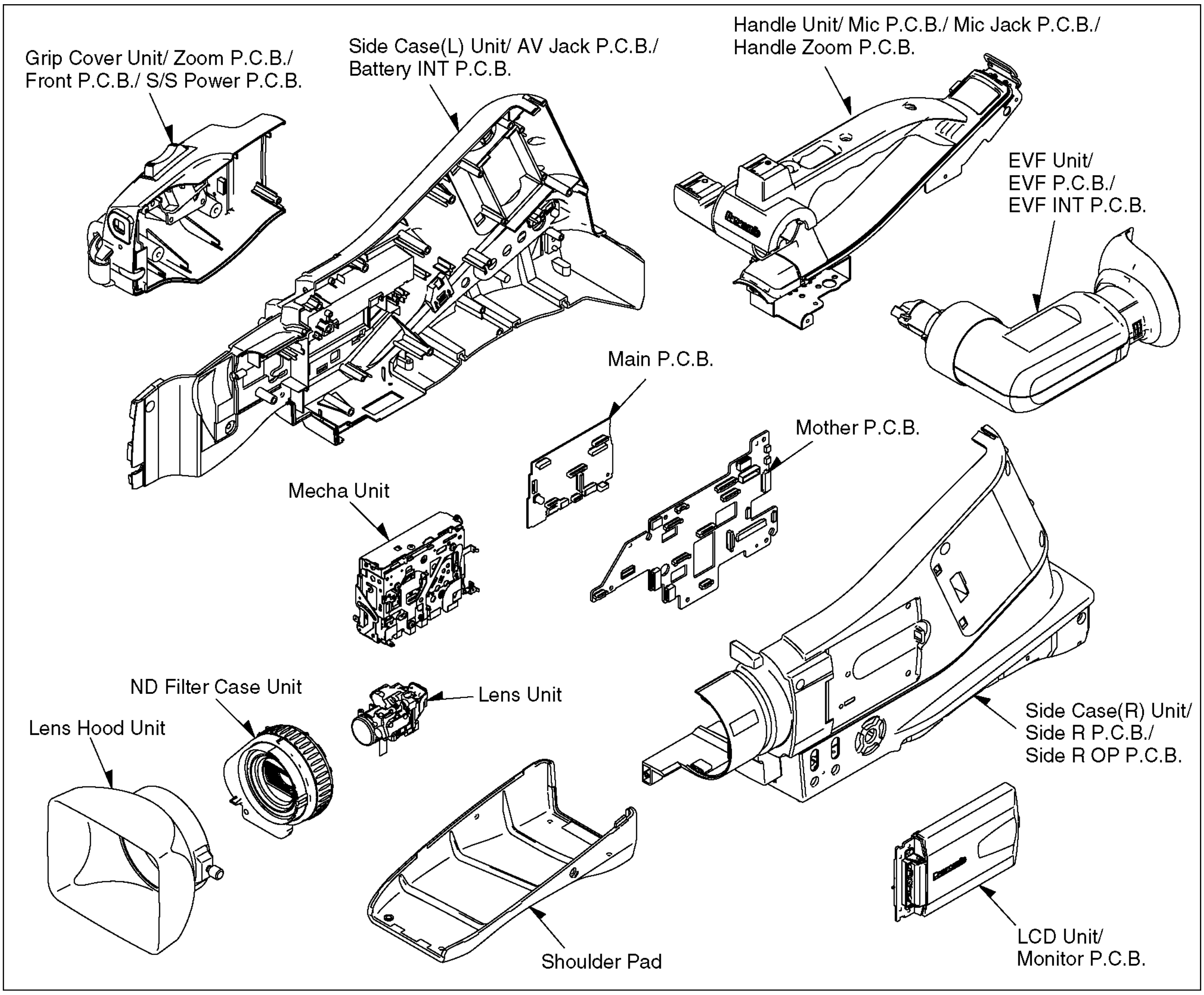


Fig. F1

8.3. Disassembly Procedures

Flow-Chart for Disassembly Procedure

No.	Item / Part	Fig.	Removal (Screw,Connector,Flex. & Other)
1	Side Case (R) Unit	Fig.D1	8-Screws (A) Face Panel Shoulder Pad
		Fig.D2	1-Screw (B) 4-Tabs ND-Filter Case Unit
		Fig.D3	3-Screws (C) Focus Ring
		Fig.D4	3-Screws (D), 4-Screws (E), 4-Screws (F) 1-Connector FP6418 Side Case (R) Unit
2	Lens Unit	Fig.D5	4-Screws (G) 2-Connectors P6406, P6408
		Fig.D6	3-Screws (H) 3-Connectors FP6401, FP6404, PS6417
		Fig.D7	1-Screw (I), 2-Screws (J) MF Ring Unit, Lens Unit
3	Mother P.C.B.	Fig.D8	4-Screws (K) 14-Connectors P6411, P6412, P6420, P6424, FP6402, FP6405, FP6407, FP6409, FP6410, FP6413, FP6414, FP6415, FP6416, FP6419 Mother P.C.B.
4	Main P.C.B.	Fig.D9	4-Screws (L) Grip Cover Unit
		Fig.D10	2-Screws (M), 2-Screws (N) Cassette Cover Unit 3-Screws (O), 2-Screws (P) 1-Connector P6751 EVR Int P.C.B., Side Case (L) Unit
		Fig.D11	1-Screw (Q) 5-Connectors FP2201, FP2202, FP2203, FP2204, FP5001 Mecha Frame Unit Main P.C.B.
5	Mecha Unit	Fig. D12	3-Screws (R) Mecha Unit
6	Handle/EVF Unit	Fig.D13	2-Screws (S) Handle Unit 1-Screw (T) Accesories Shoe Spring 4-Screws (U) Shoe Hold Plate
		Fig. D14	2-Screws (V) Mic Unit
		Fig. D15	2-Screws (W) Slide Cover 3-Screws (X) EVF Unit
7	EVF Int P.C.B.	Fig.D16	2-Screws (Y) EVF Ring, EVF Lock Ring
		Fig.D17	EVF Cap
		Fig.D18	4-Screw (Z) 5-Tabs EVF Case Top, EVF Case Bottom
		Fig.D19	1-Connector FP6852 EVF/LCD Unit 3-Screws (a) EVF Int P.C.B.
8	EVF P.C.B.	Fig.D20	1-Connector FP802 EVF P.C.B.

No.	Item / Part	Fig.	Removal (Screw,Connector,Flex. & Other)
9	Zoom P.C.B.	Fig.D21	3-Screws (b) Grip Cover
		Fig.D22	1-Screw (c) 1-Connector FP6651 Zoom P.C.B.
10	Front P.C.B.	Fig.D23	2-Screws (d) Remocon Sensor Window
		Fig.D24	2-Screws (e) Front P.C.B.
11	S/S Power P.C.B.	Fig.D25	3-Screws (f) Grip op Unit
		Fig.D26	3-Screws (g) S/S Power P.C.B.
12	AV Jack P.C.B.	Fig.D27	3-Screws (h), 2-Screws (i), 1-Screw (j) Side Case (L)
		Fig.D28	4-Screws (k), 1-Screw (l), 1-Screw (m), 1-Screw (n) L Earth Plate B
		Fig.D29	2-Screws (o) AV Jack Plate, AV Jack P.C.B.
13	Battery Int P.C.B.	Fig.D30	4-Screws (p) Battery Case Unit
		Fig.D31	2-Screws (q) 1-Connector FP6751 Battery Holder, Battery Int P.C.B.
14	LCD Unit	Fig.D32	6-Screws (r) Hinji Earth Plate 1-Screw (s) LCD Unit
15	Monitor P.C.B.	Fig.D33	2-Screws (t) LCD Hinji Holder, Hinji Support Plate
		Fig.D34	2-Screws (u) 4-Tabs LCD Case Top Unit, LCD Hinji Unit
		Fig.D35	LCD Frame 1-Connector FP901 Monitor P.C.B.

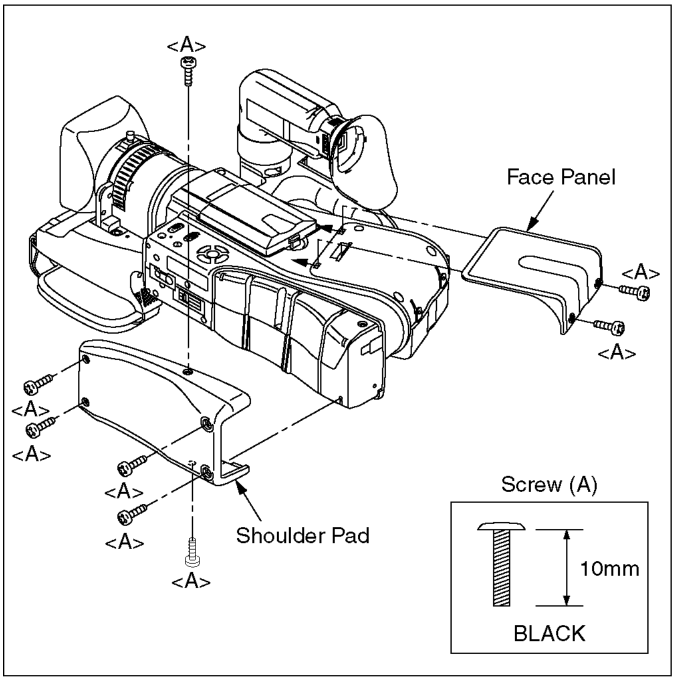


Fig. D1

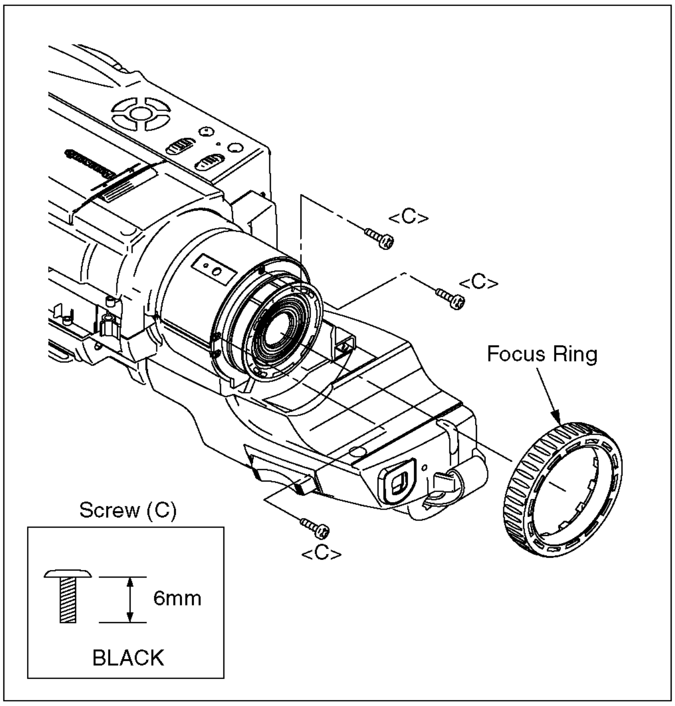


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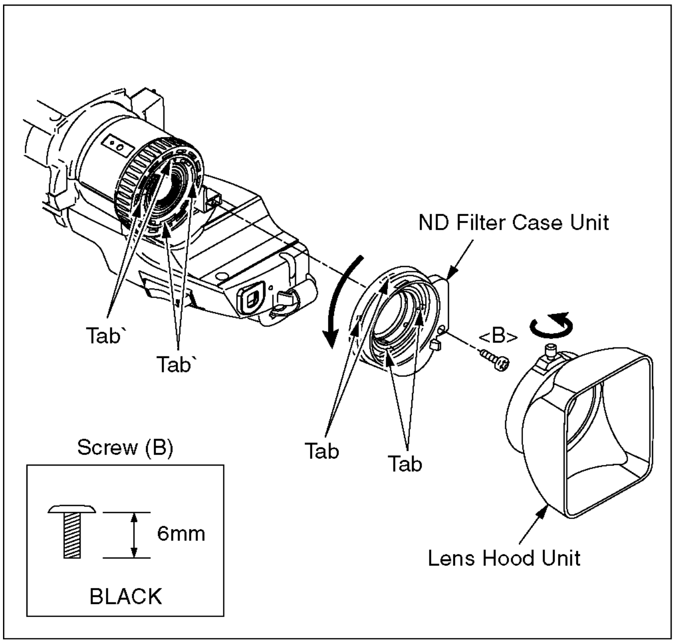


Fig. D2

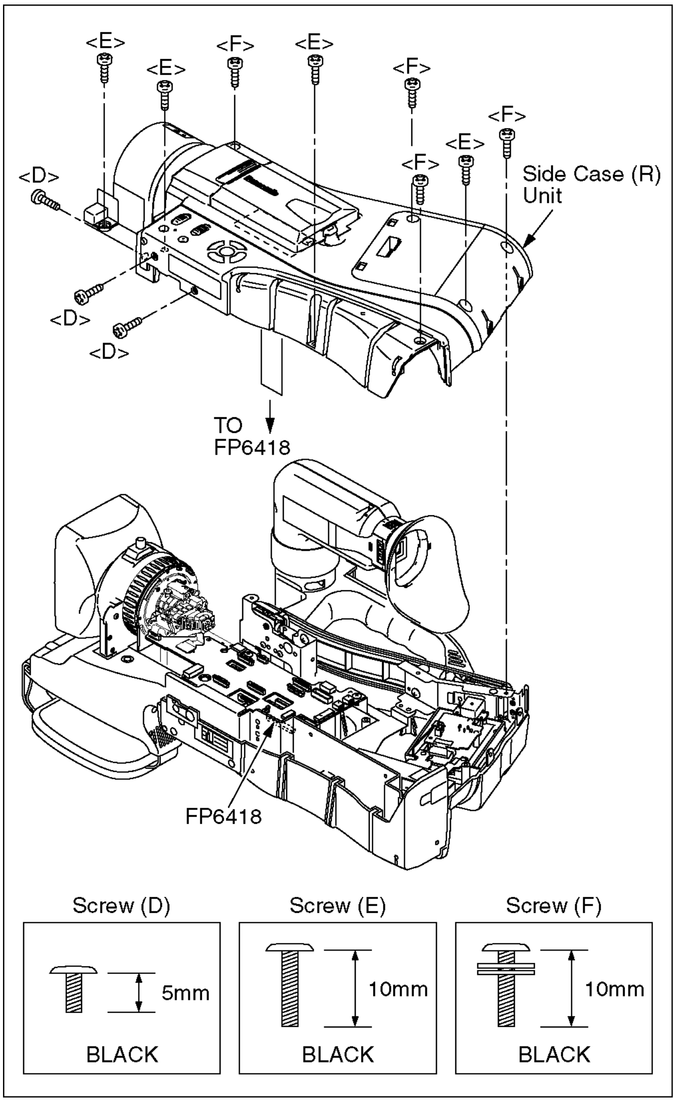


Fig. D4

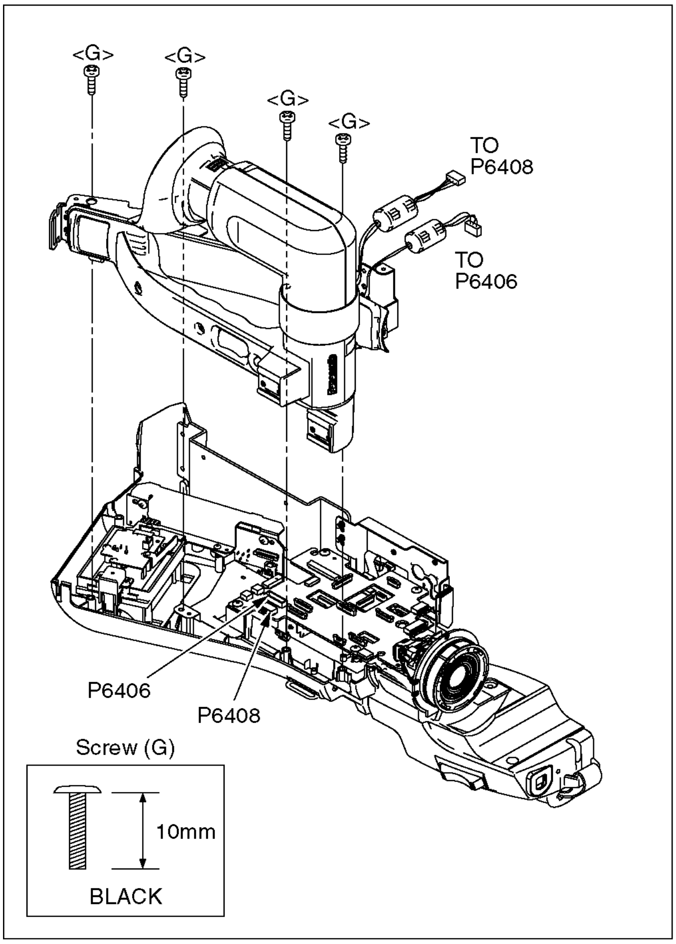


Fig. D5

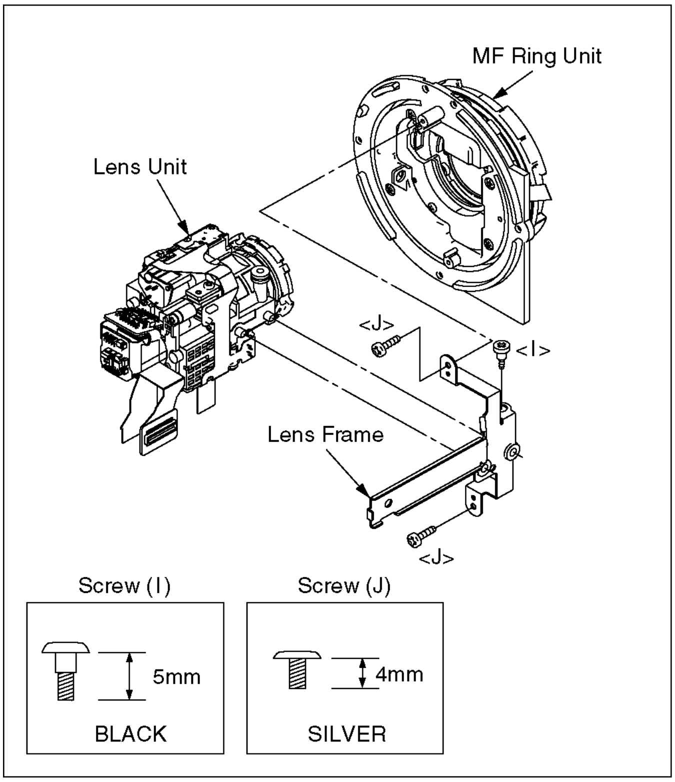


Fig. D7

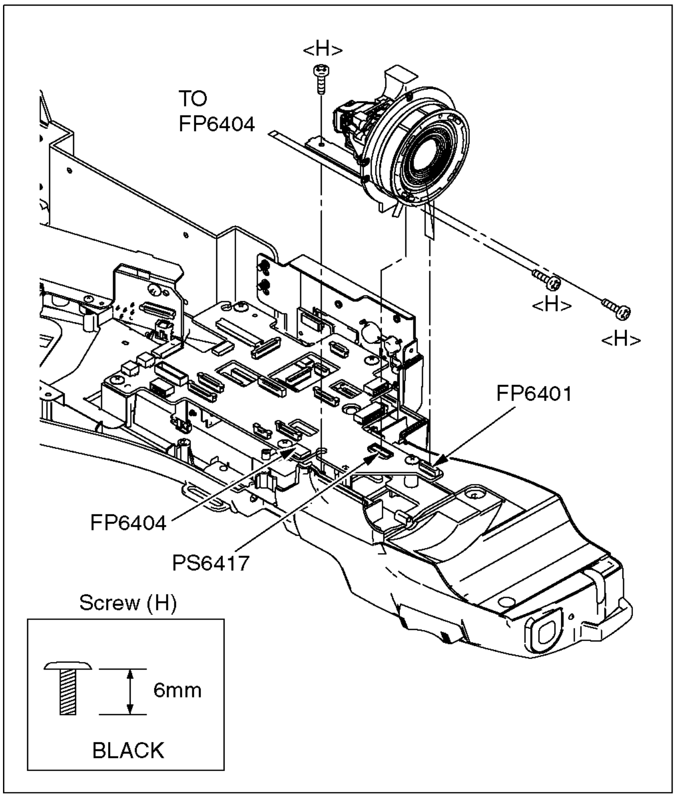


Fig. D6

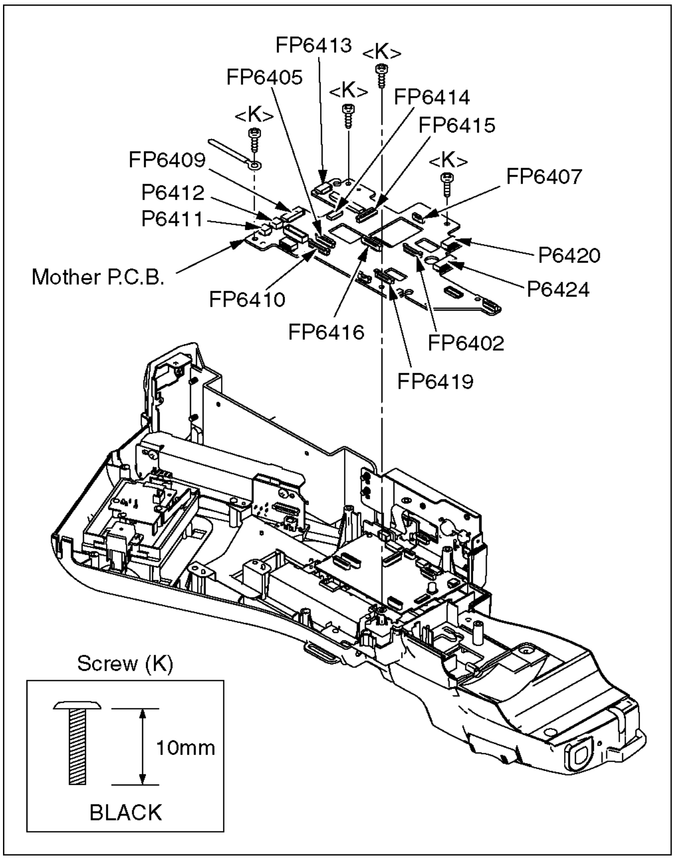


Fig. D8

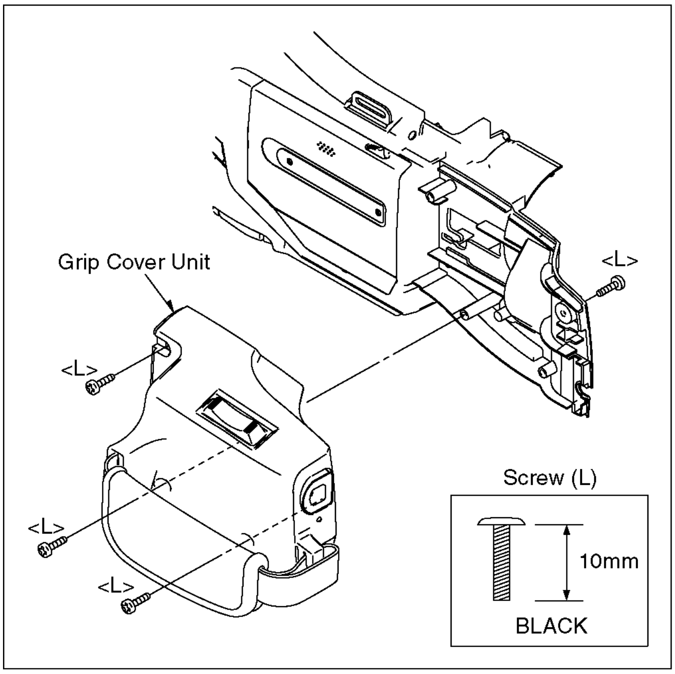


Fig. D9

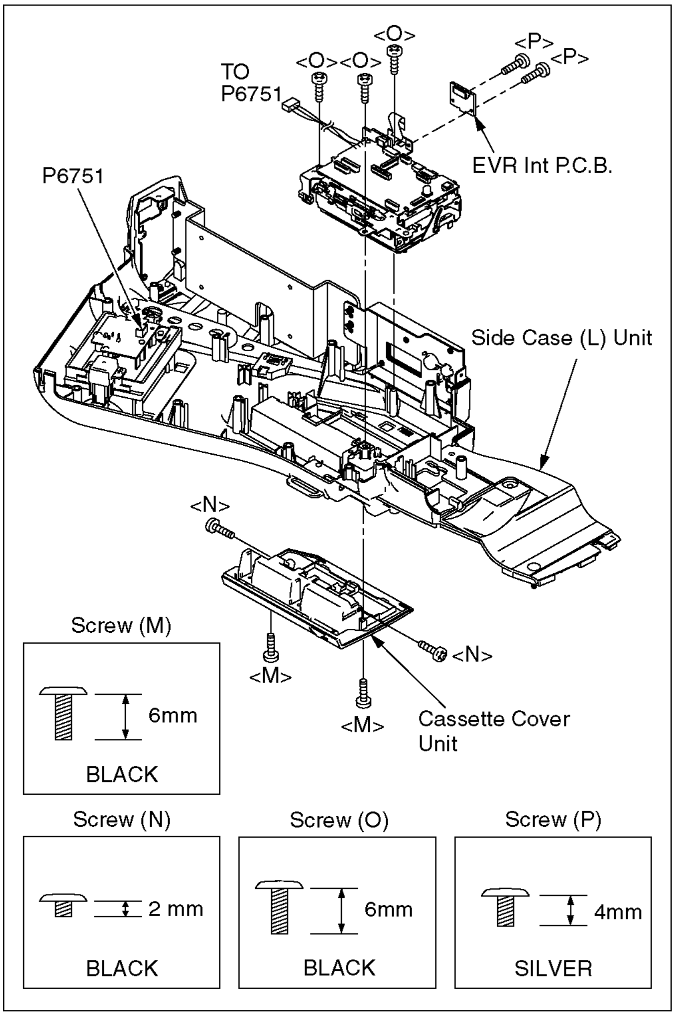


Fig. D10

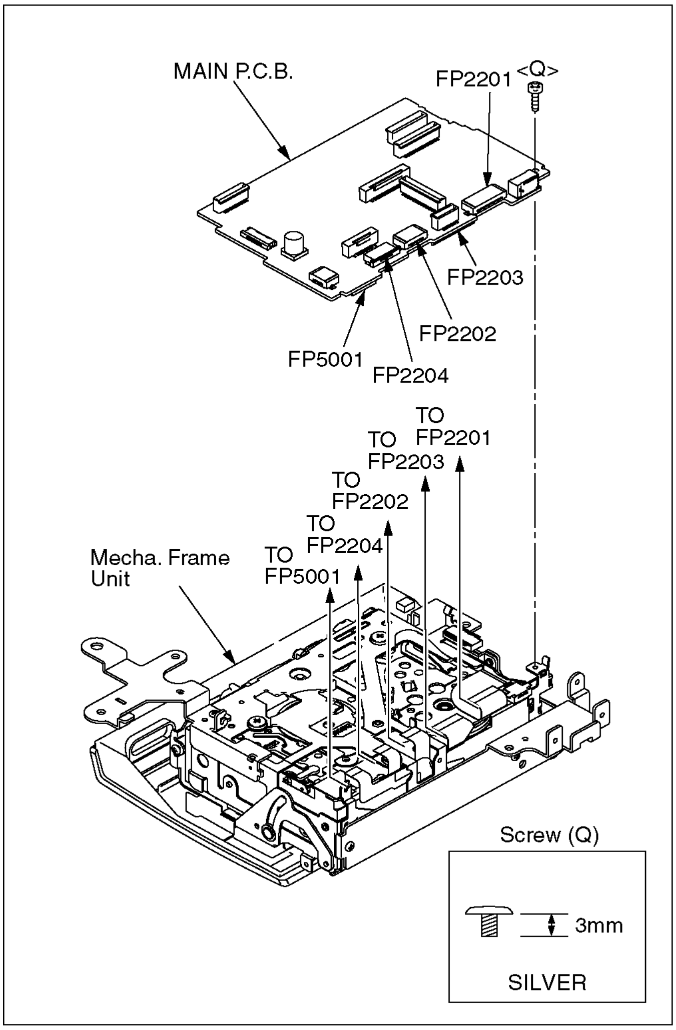


Fig. D11

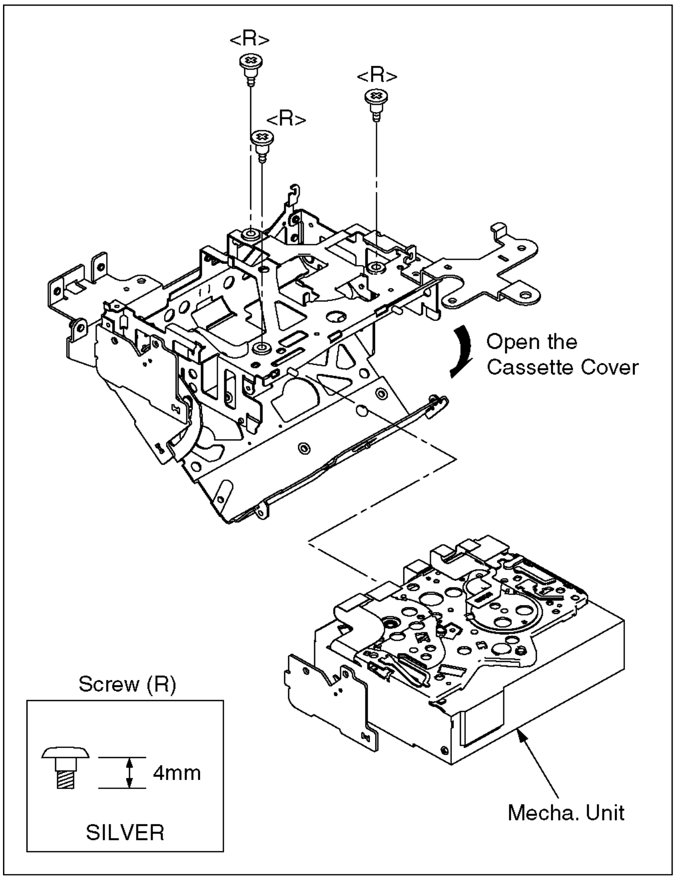


Fig. D12

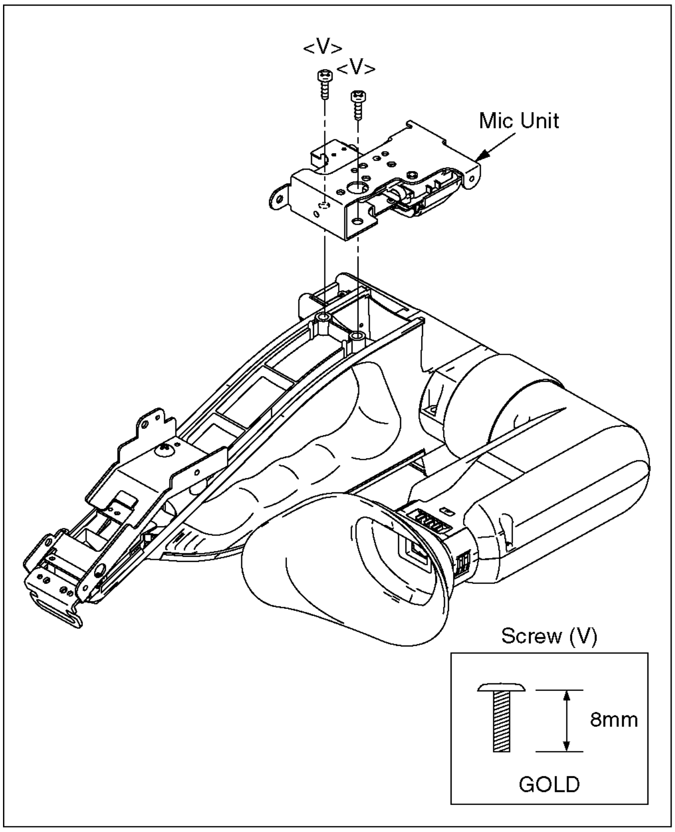


Fig. D14

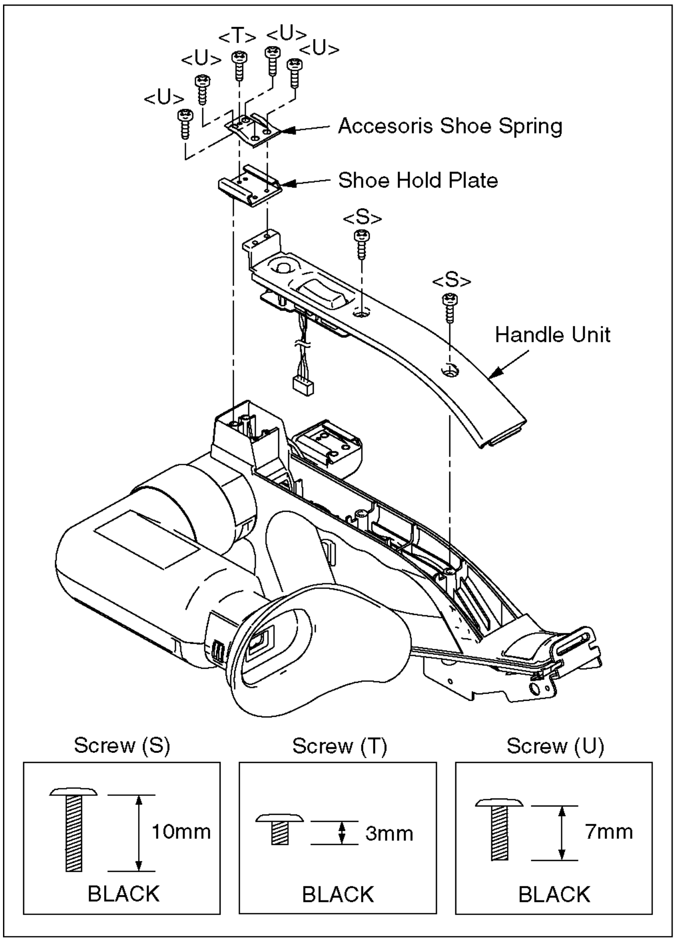


Fig. D13

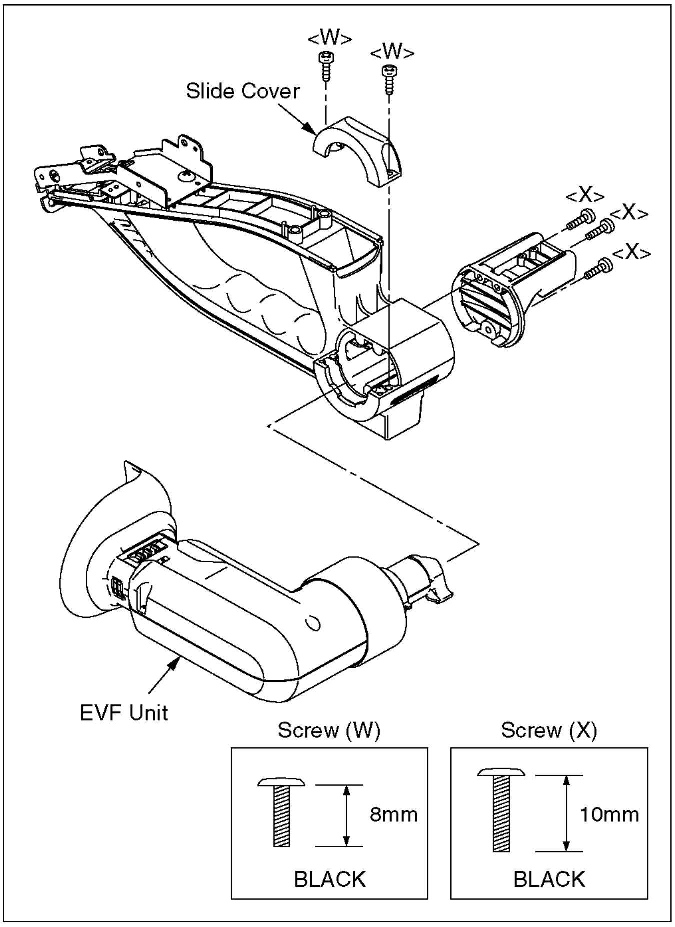


Fig. D15

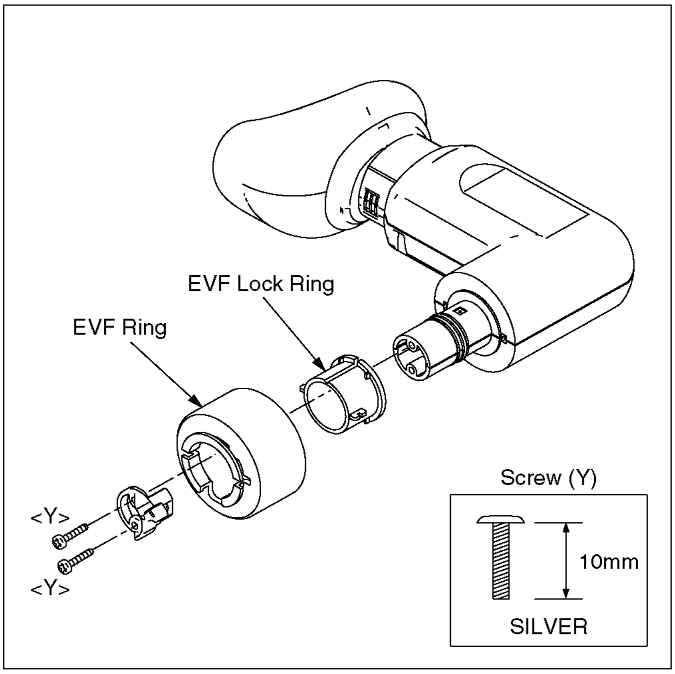


Fig. D16

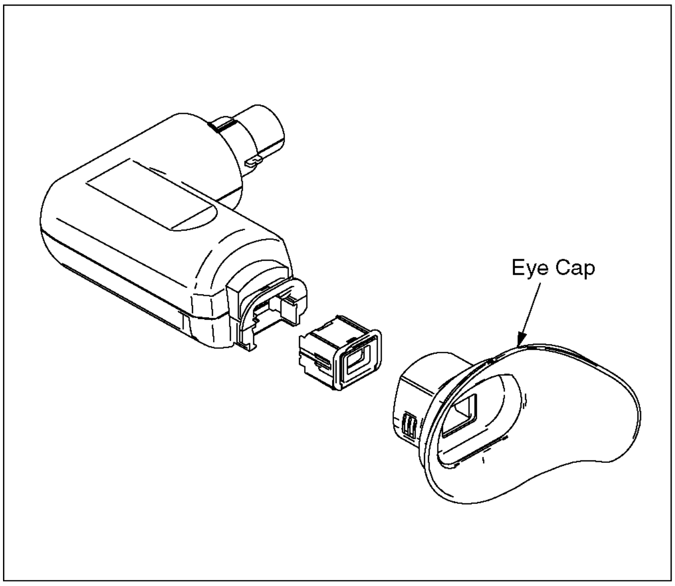


Fig. D17

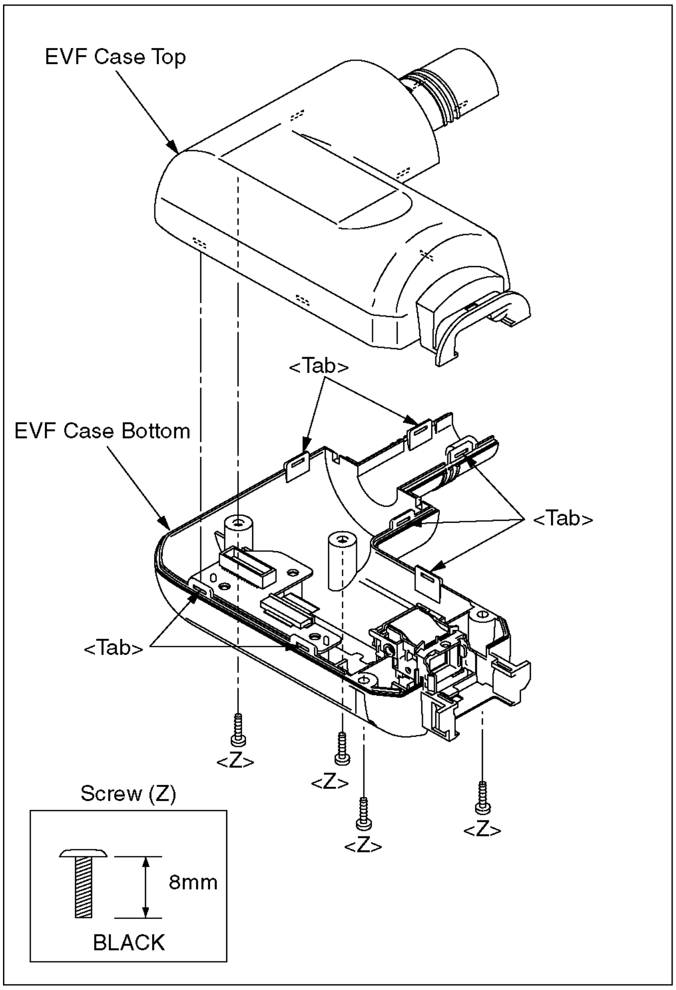


Fig. D18

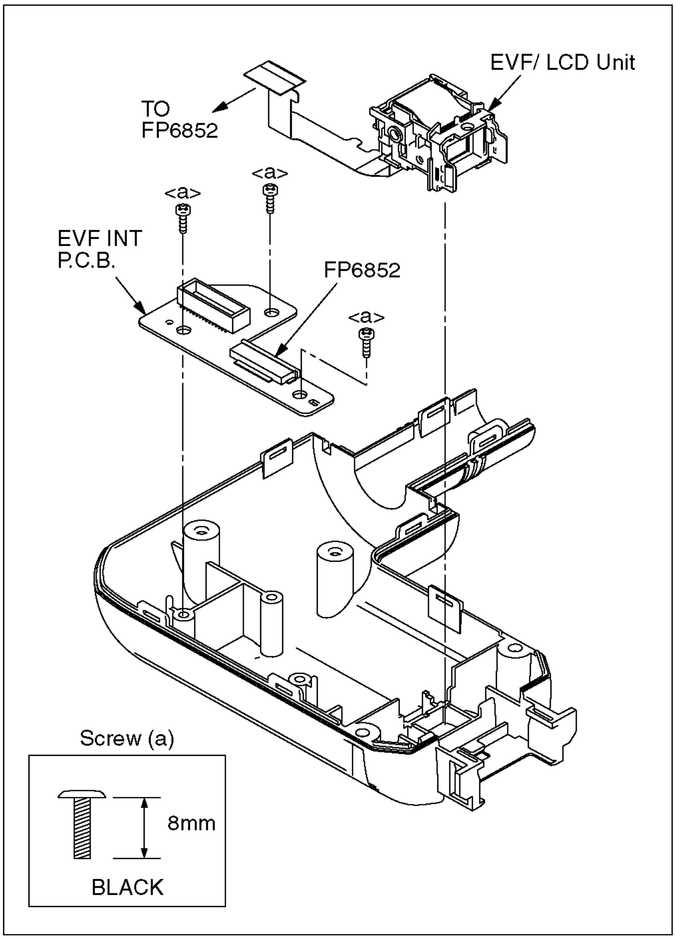


Fig. D19

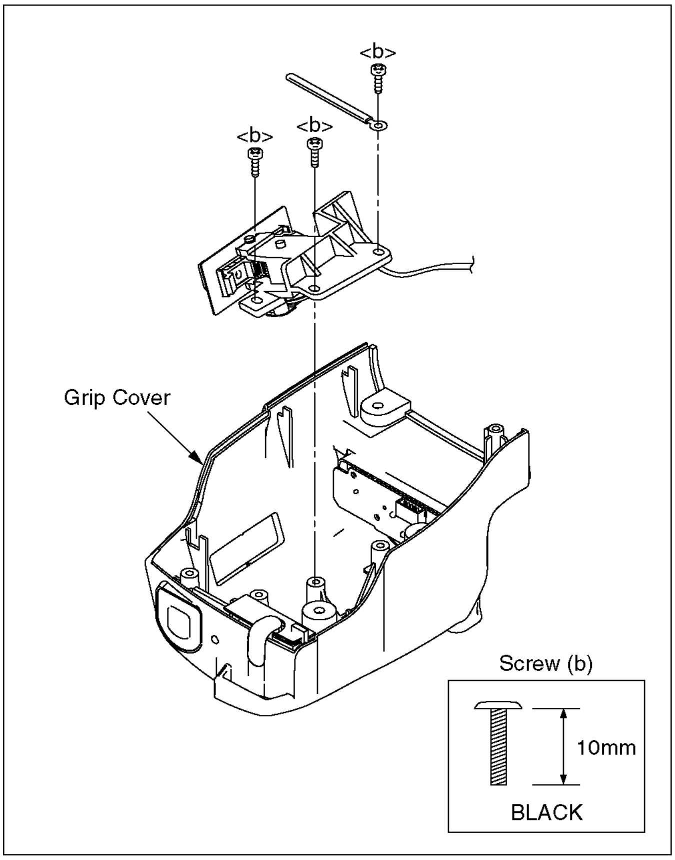


Fig. D21

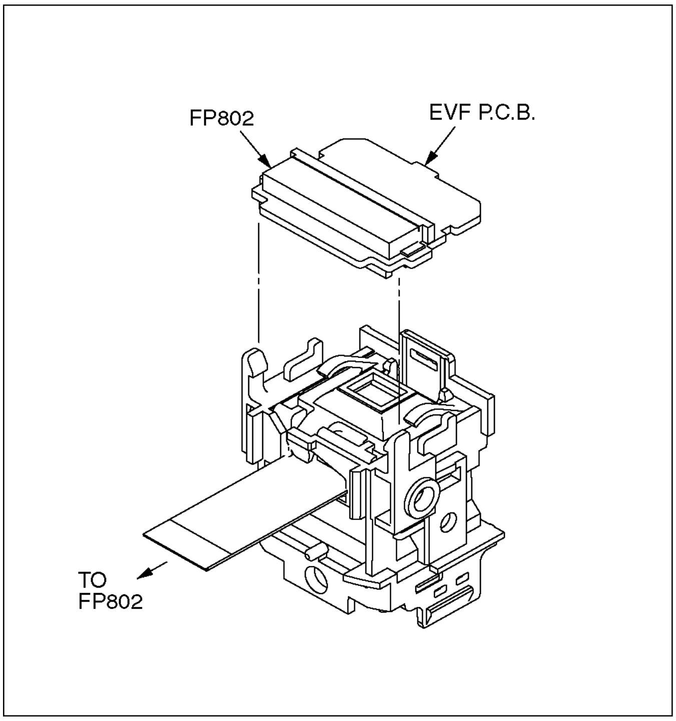


Fig. D20

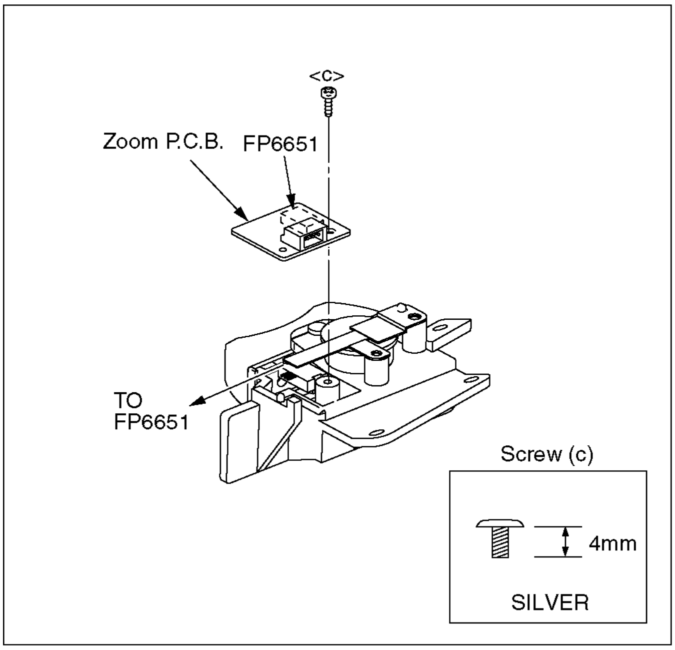


Fig. D22

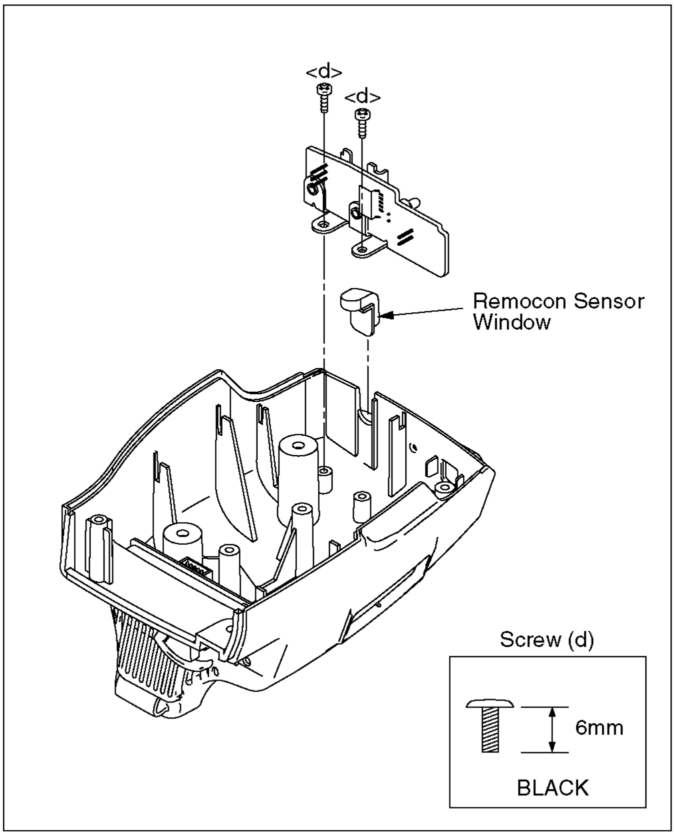


Fig. D23

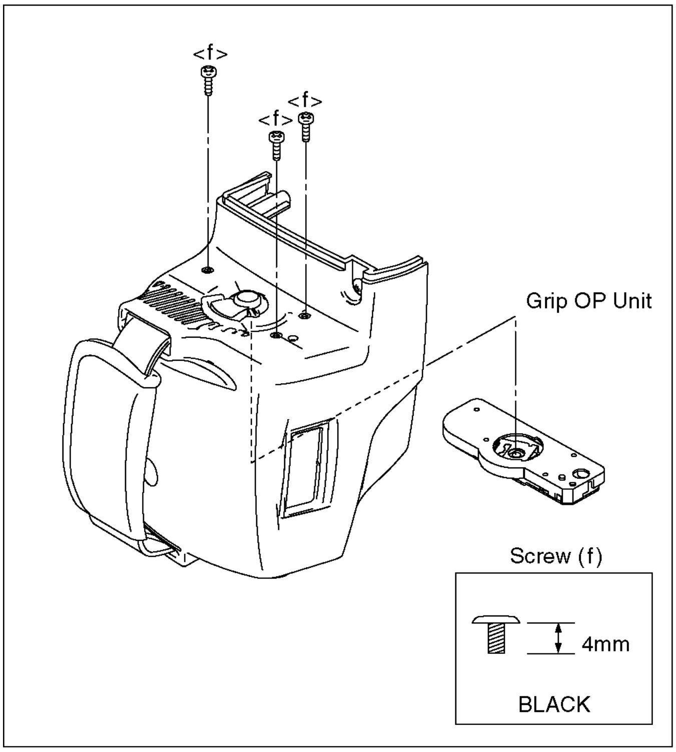


Fig. D25

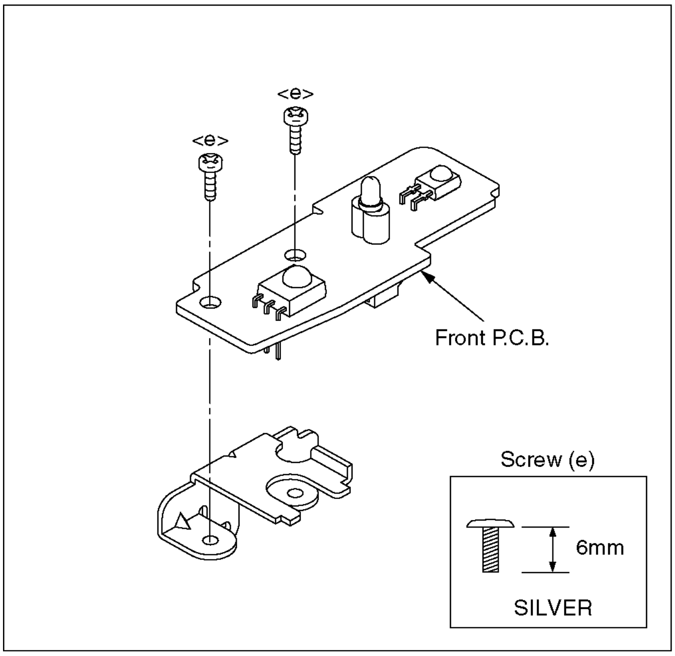


Fig. D24

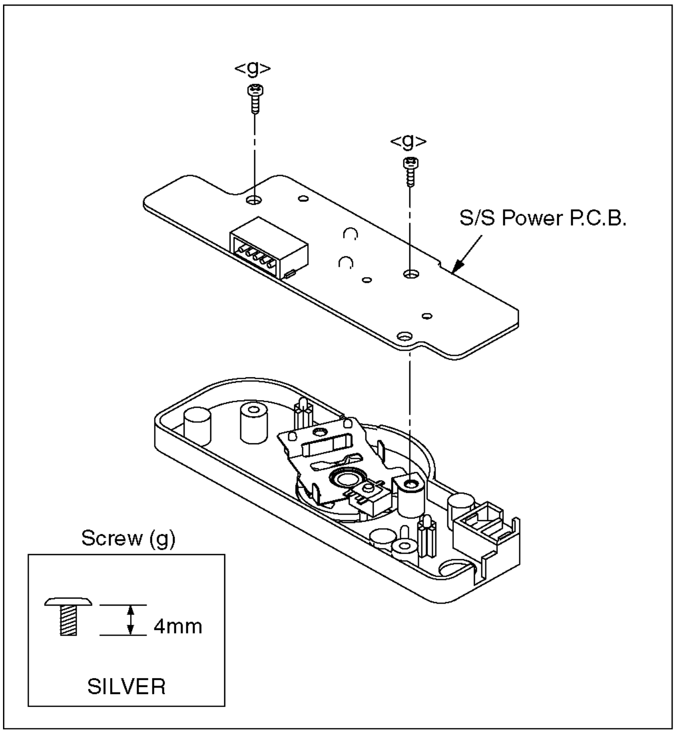


Fig. D26

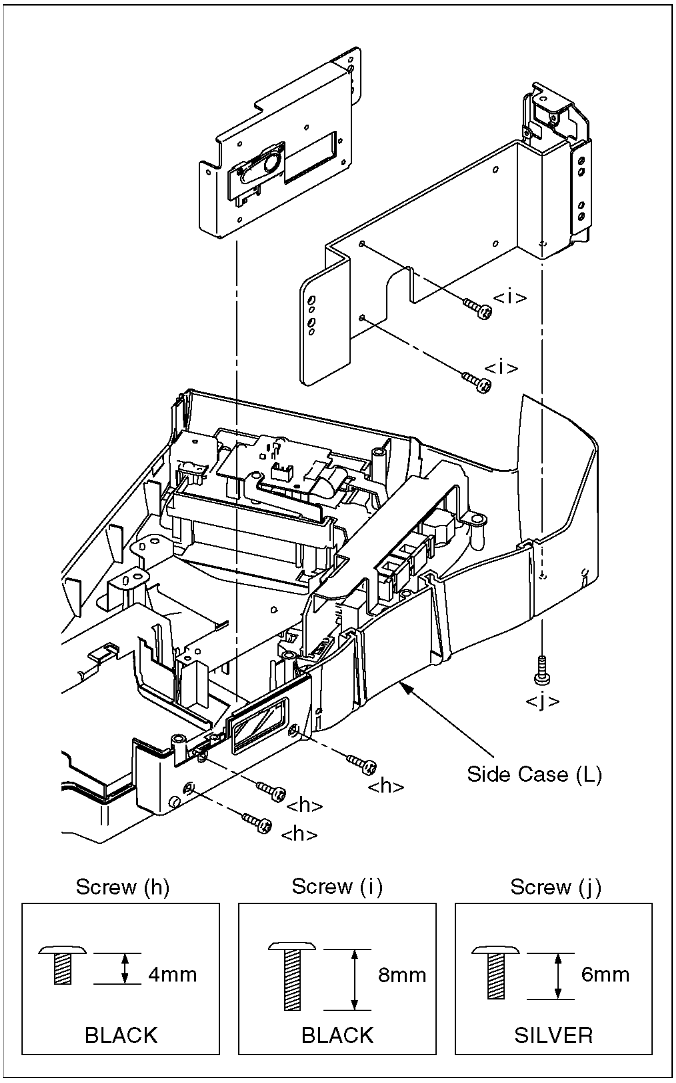


Fig. D27

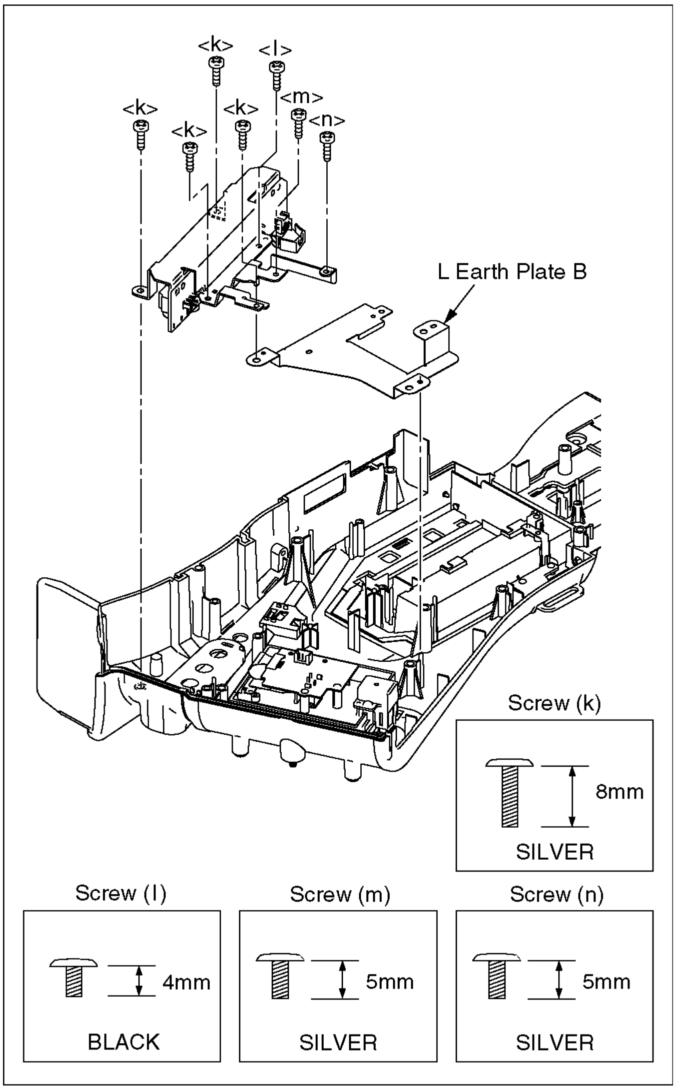


Fig. D28

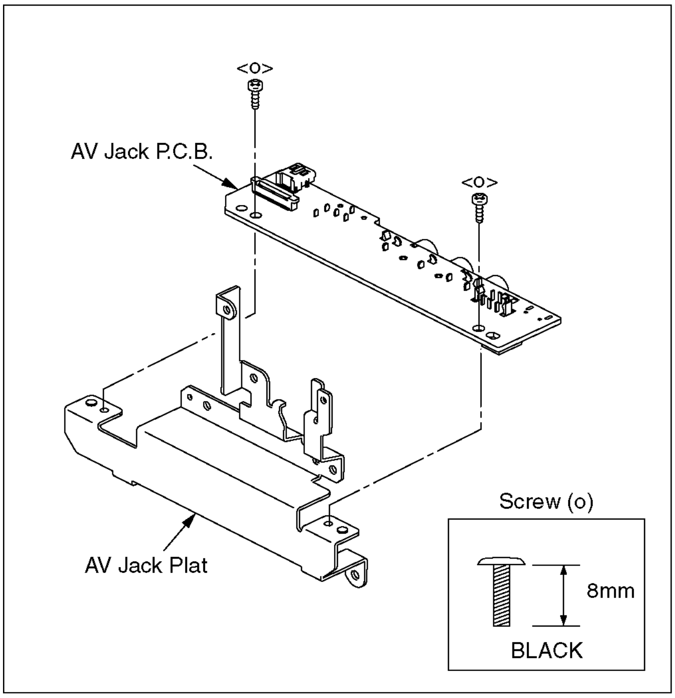


Fig. D29

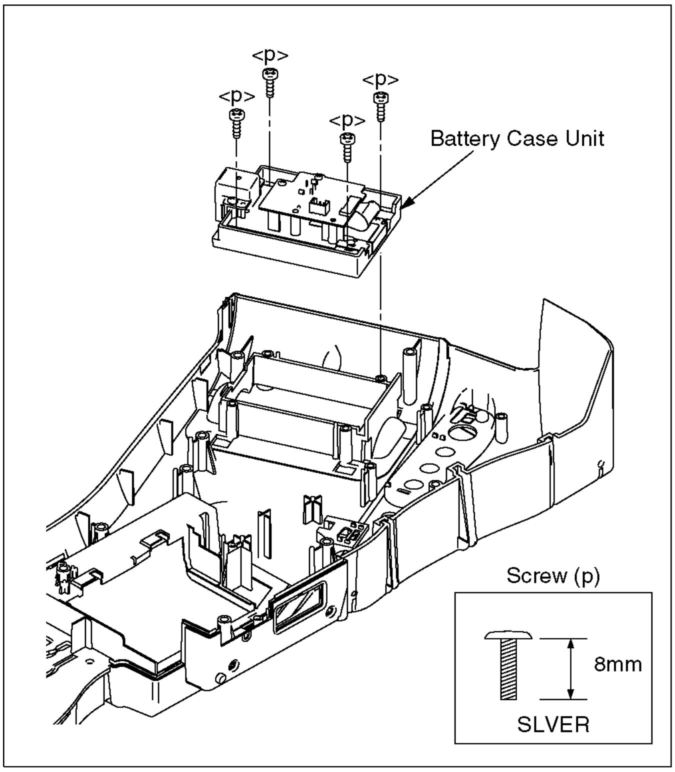


Fig. D30

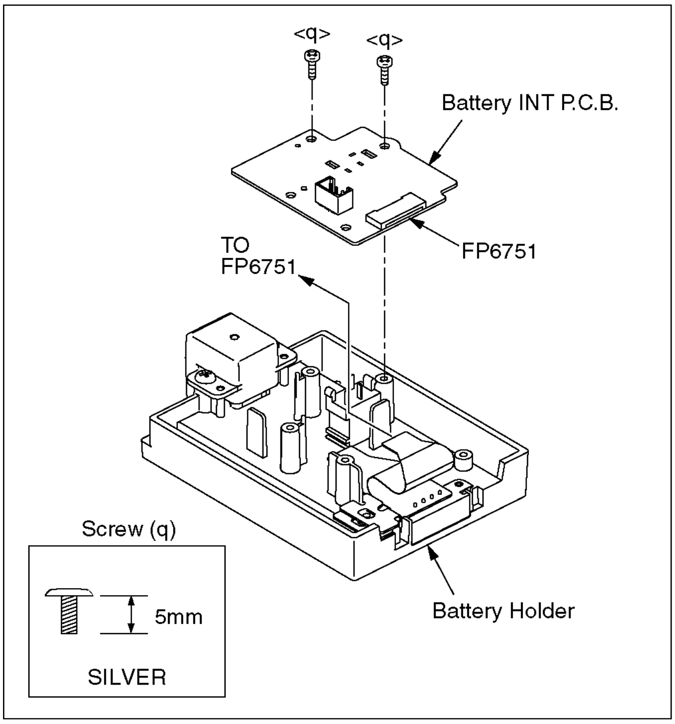


Fig. D31

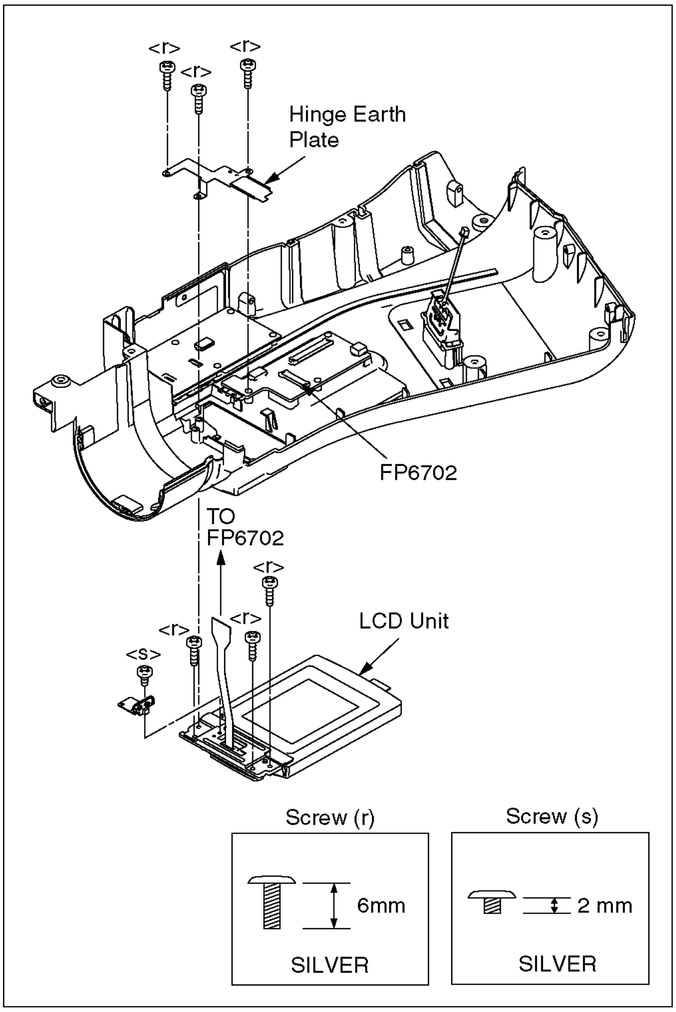


Fig. D32

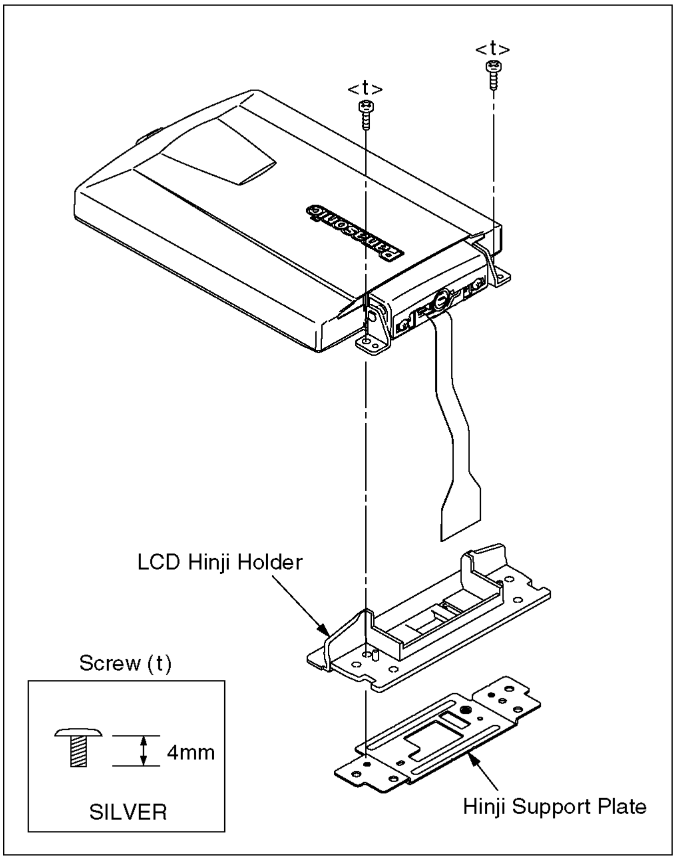


Fig. D33

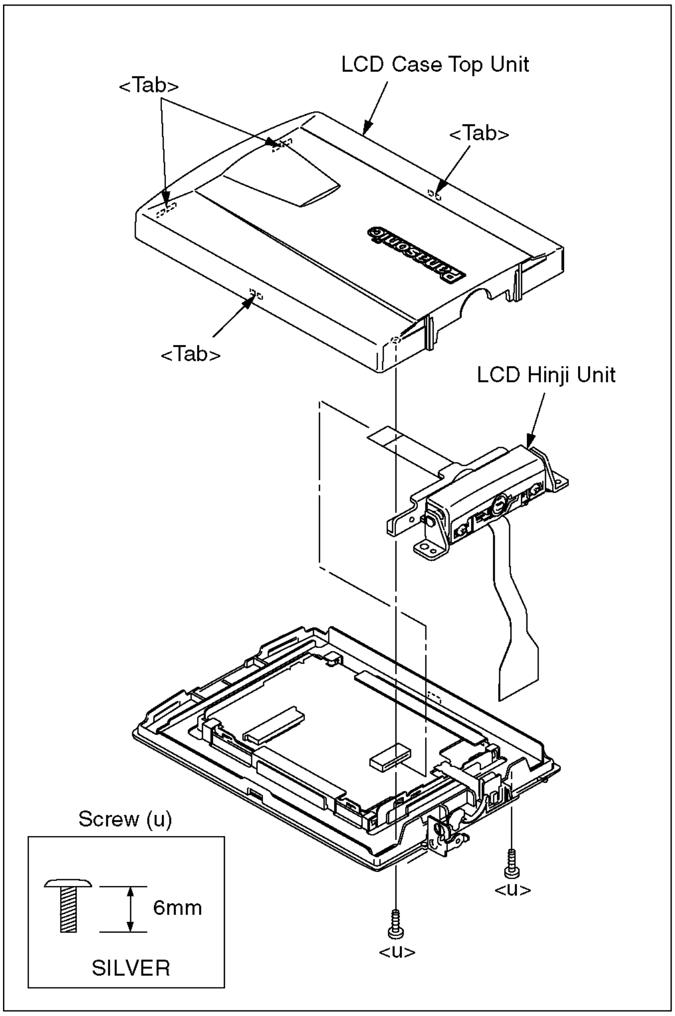


Fig. D34

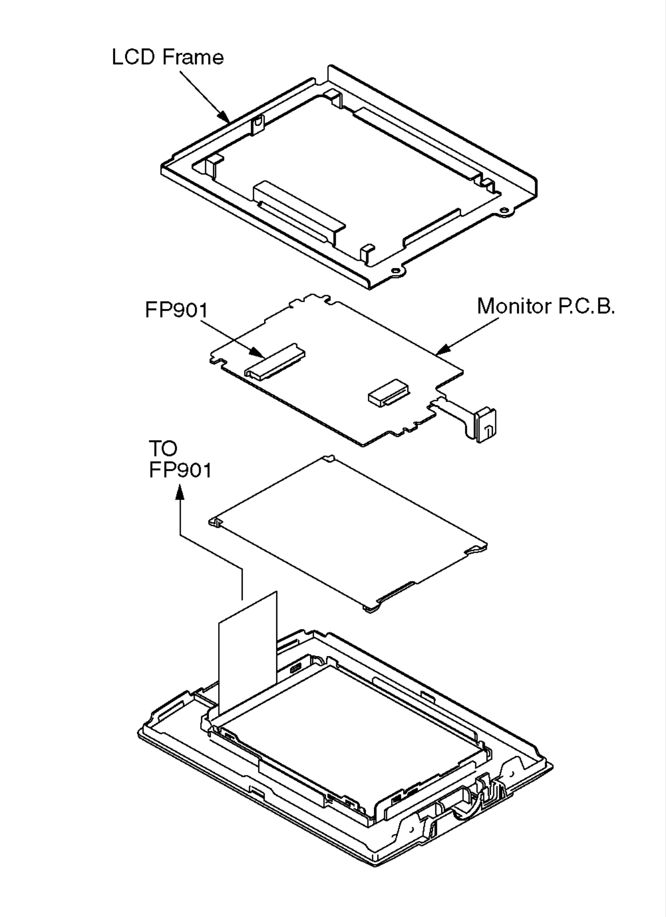


Fig. D35

8.4. Disassembly Procedures Mecha. Unit

Flow-Chart for Disassembly Procedure

No.	Item / Part	Fig.	Removal (Screw, Connector, Flex. & Other)
1	Cassette Up Unit	Fig. M1	It makes the mechanism position in Eject condition (For Battery)
		Fig. M2	3-Screws (A)
		Fig. M3	3-Tabs I remove the piece arrangement unit from rail department
2	Cylinder Unit	Fig. M4	1-Screw (B)
		Fig. M5	3-Screw (C) Cylinder Unit

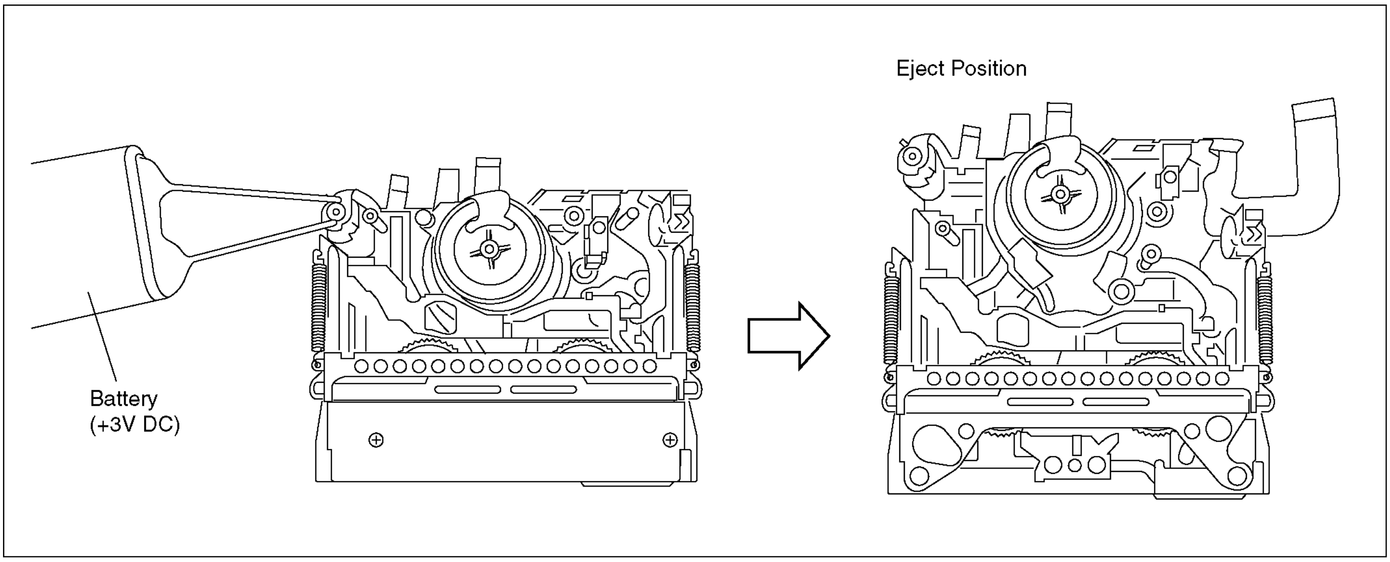


Fig. M1

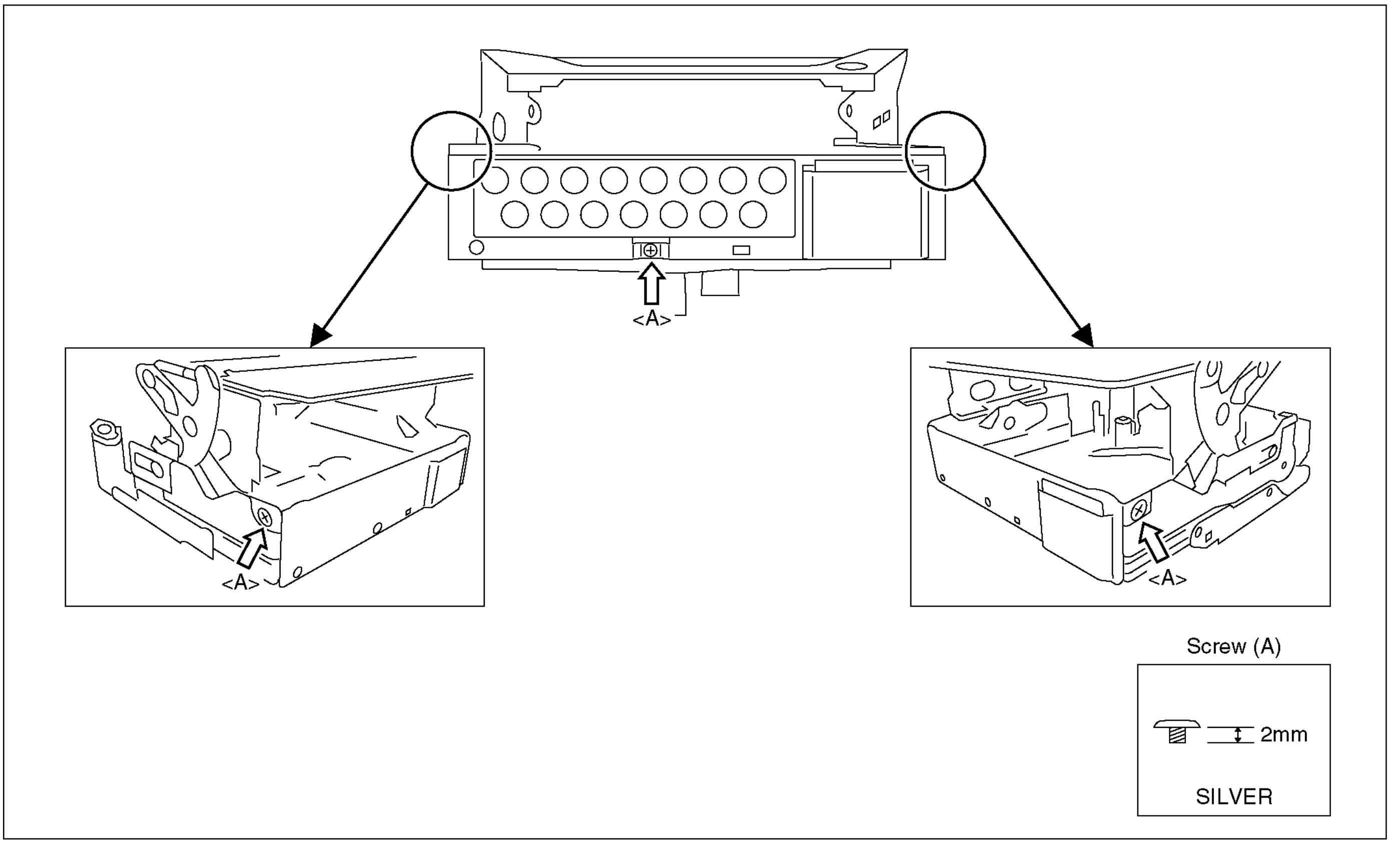


Fig. M2

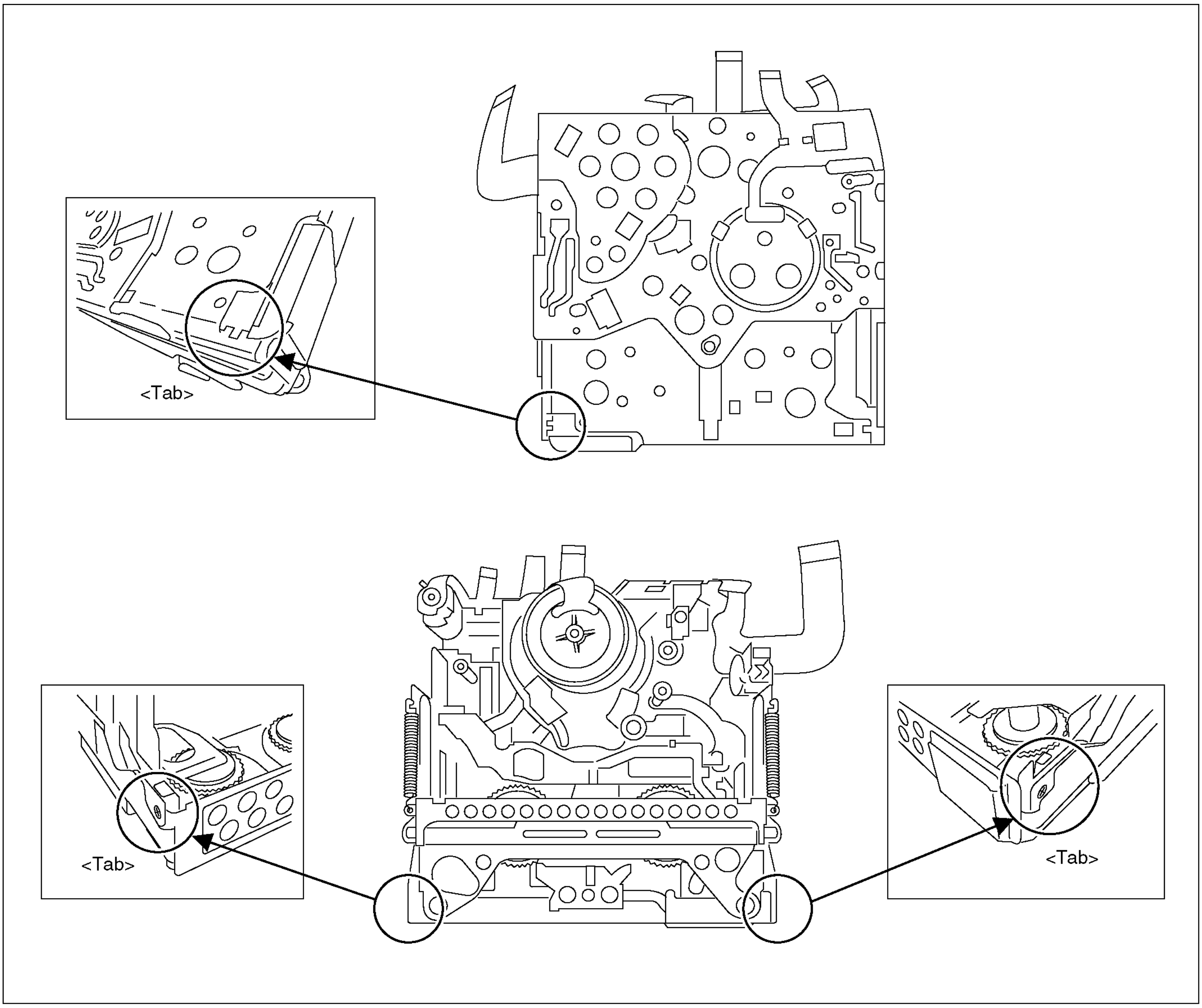


Fig. M3

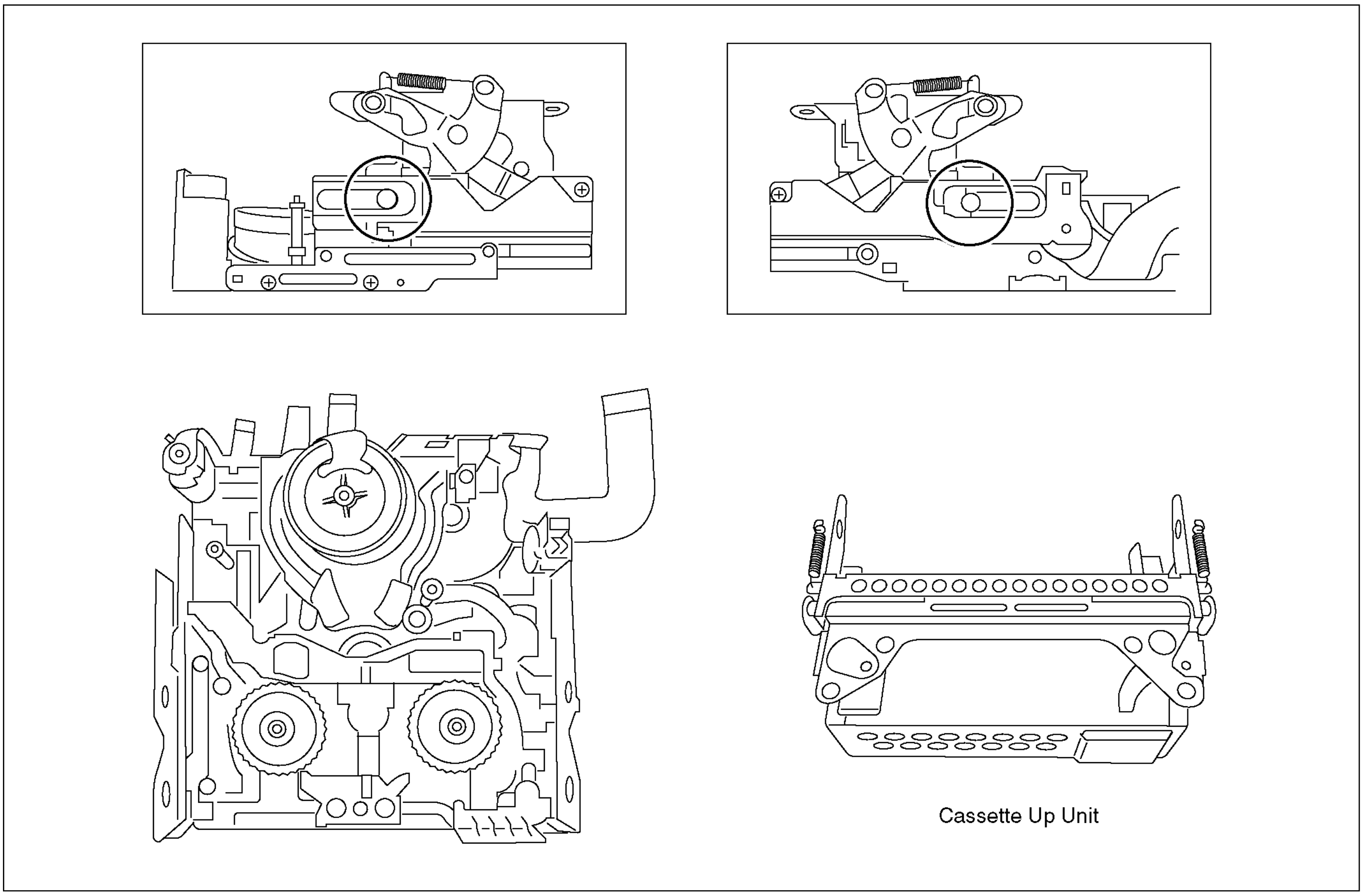


Fig. M4

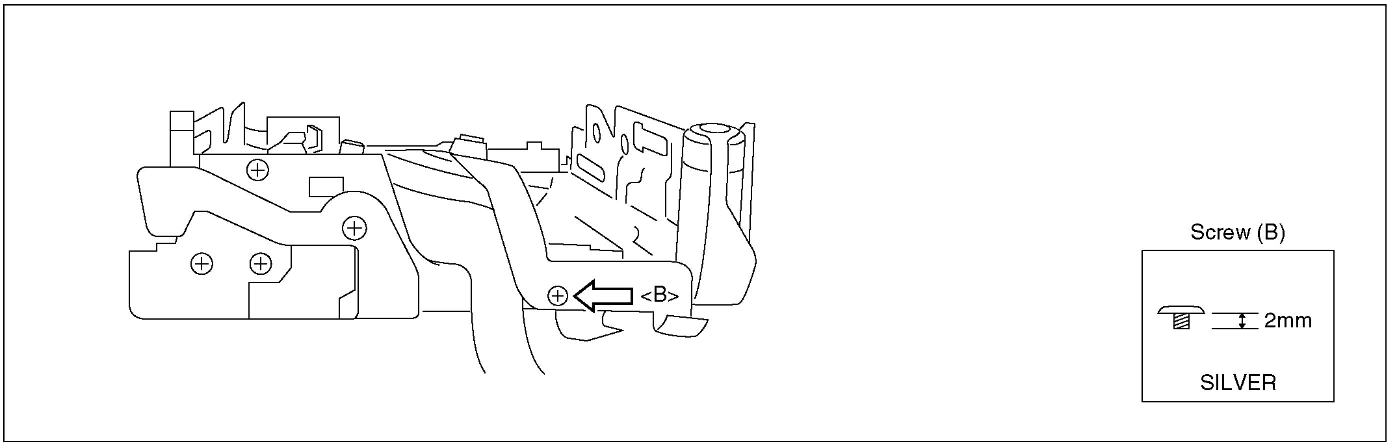


Fig. M5

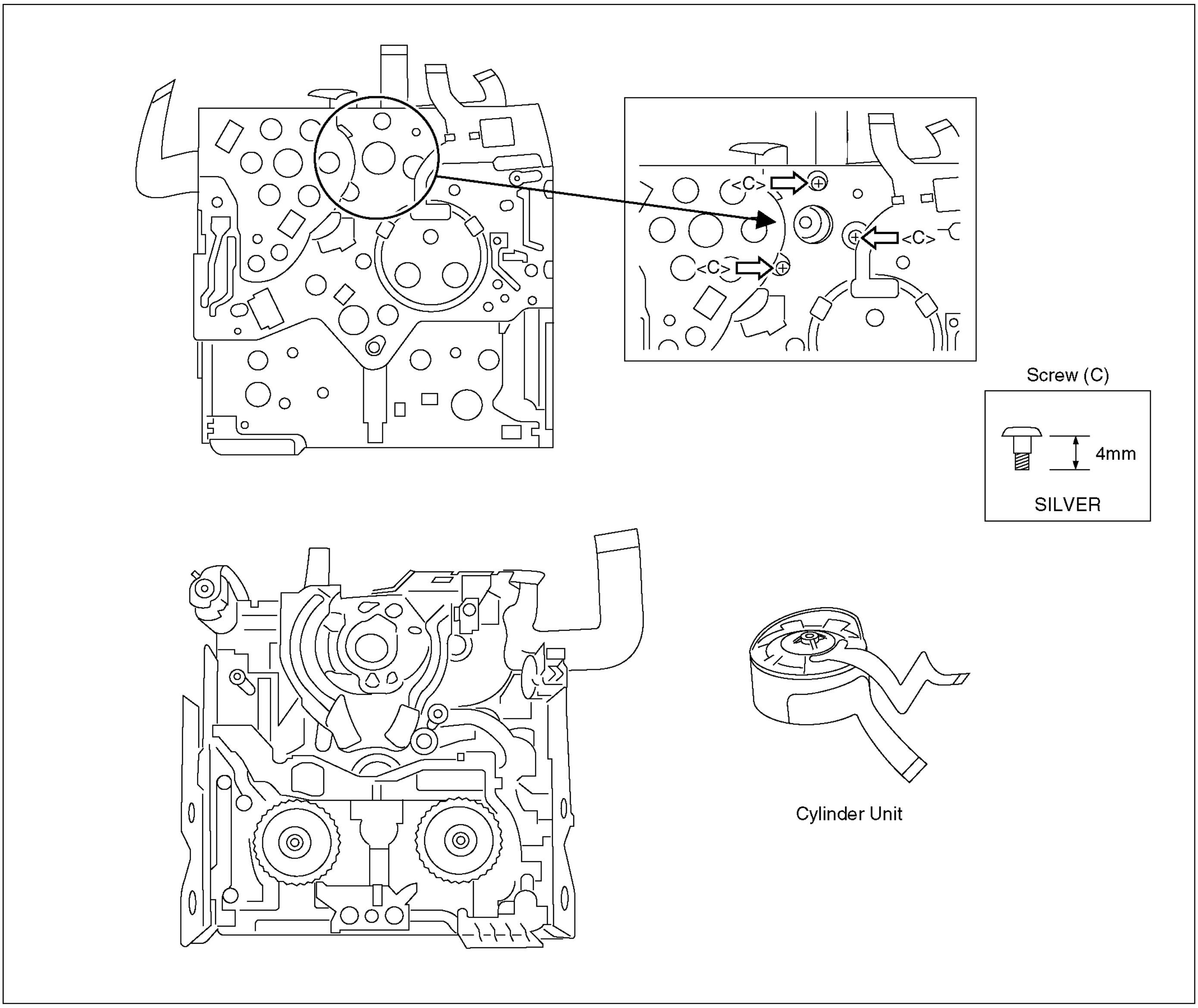


Fig. M6

8.5. Disassembly Procedures of Camera Lens Unit

The following flowchart describes order or steps for removing the Camera lens unit and certain printed circuit boards in order to make access to the item needing service.
To reassemble the unit follow the steps in reverse order.

Step	Ref.-No.
1. Prism Unit	Ref.-No.301
2. CCD Cushion & Crystal Filter	Ref.-No.302/303
3. Focus Motor Unit	Ref.-No.304-4
4. Master Flange Unit	Ref.-No.304-1
5. 3rd Moving Frame Unit & 4th Moving Frame Unit	Ref.-No.304-3/304-2
6. IRIS Unit	Ref.-No.304-5
7. Guide Pole & 2nd Moving Frame Unit	Ref.-No.304-6/304-7/304-8
8. Zoom Motor Unit & Lens Main Frame Unit	Ref.-No.304-9/304-10

Note 1:
Each Ref.numbers are equivalent to number of Fig.L2 and Parts List.

Fig. L1

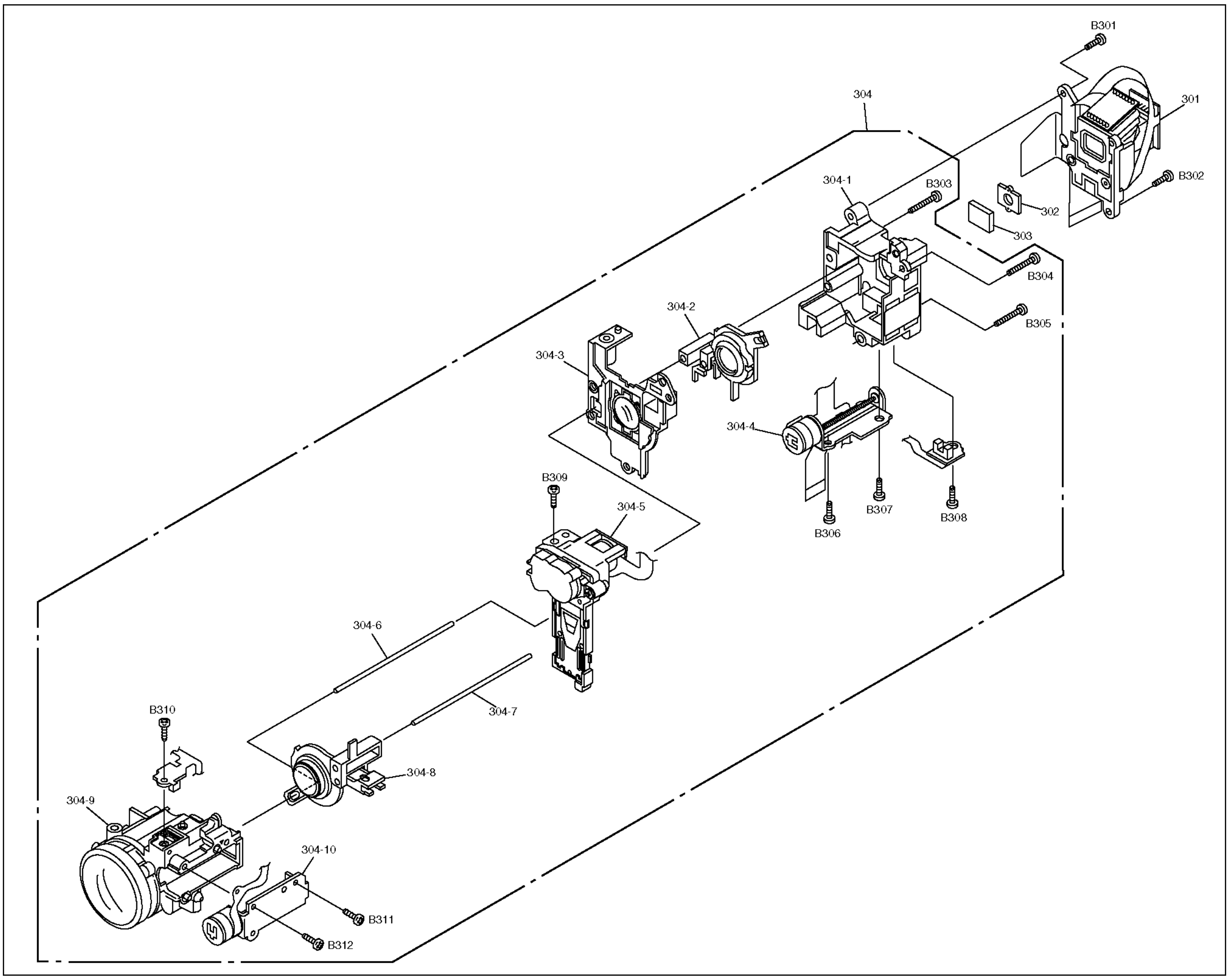


Fig. L2

9 Measurements and Adjustments

9.1. Service Positions

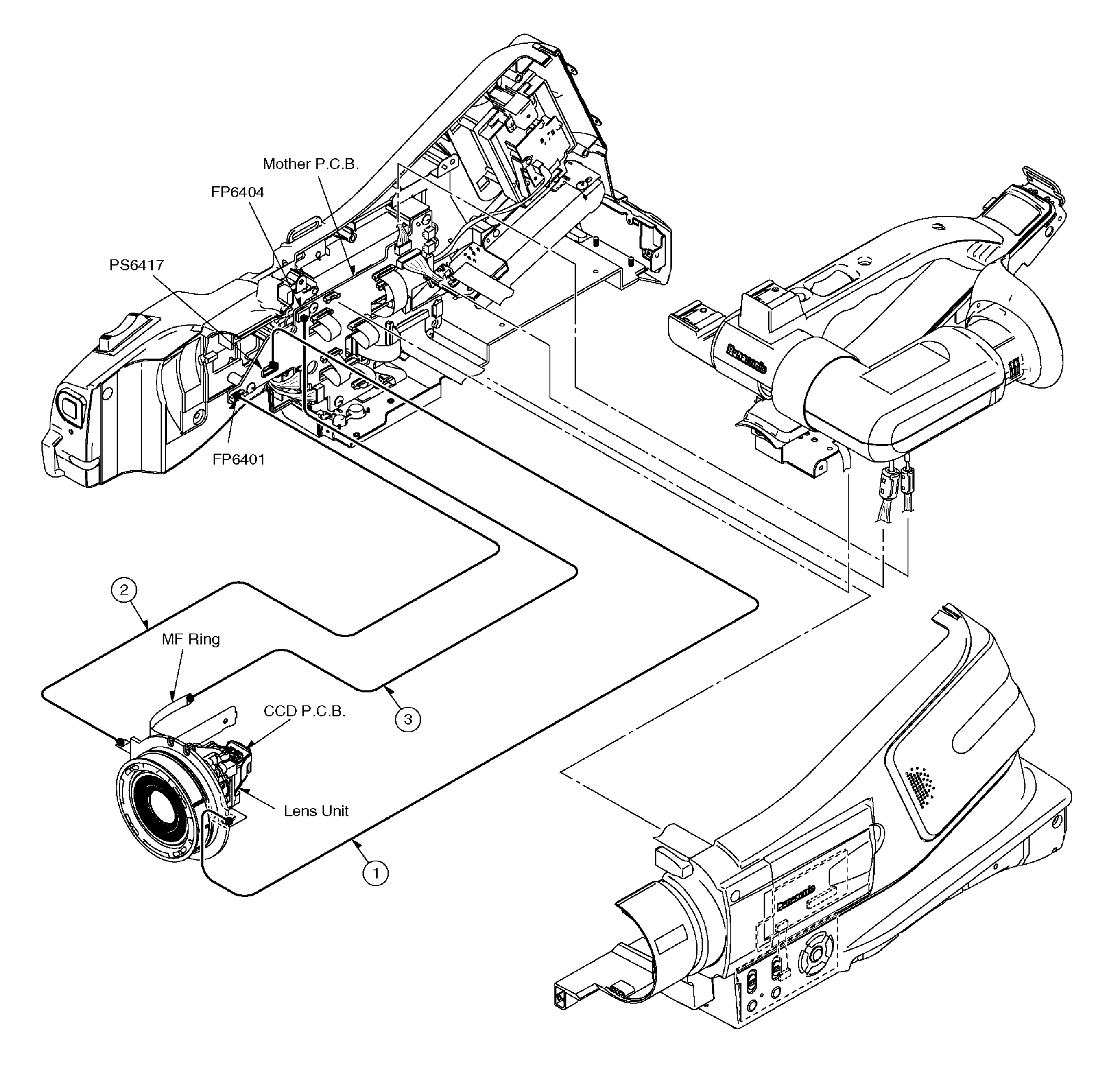
9.1.1. List of the extension cables

Use the following extension cables when checking or adjusting individual circuit boards except module Parts.
(Main P.C.B. and Mother P.C.B.)

Ref.	Part No.	Pin	Part Name	Connection	Q'ty	Remarks
(1)	VFK1453	40	Flat Cable	PS6417 (Mother) - PP6501 (Prism Unit)	1	as NV-DS7
(2)	VFK1442	21	Flat Cable	FP6401 (Mother) - Lens Unit	1	as NV-DS7
(3)	VFK1465	5	Flat Cable	FP6404 (Mother) - MF Unit	1	as NV-DS5

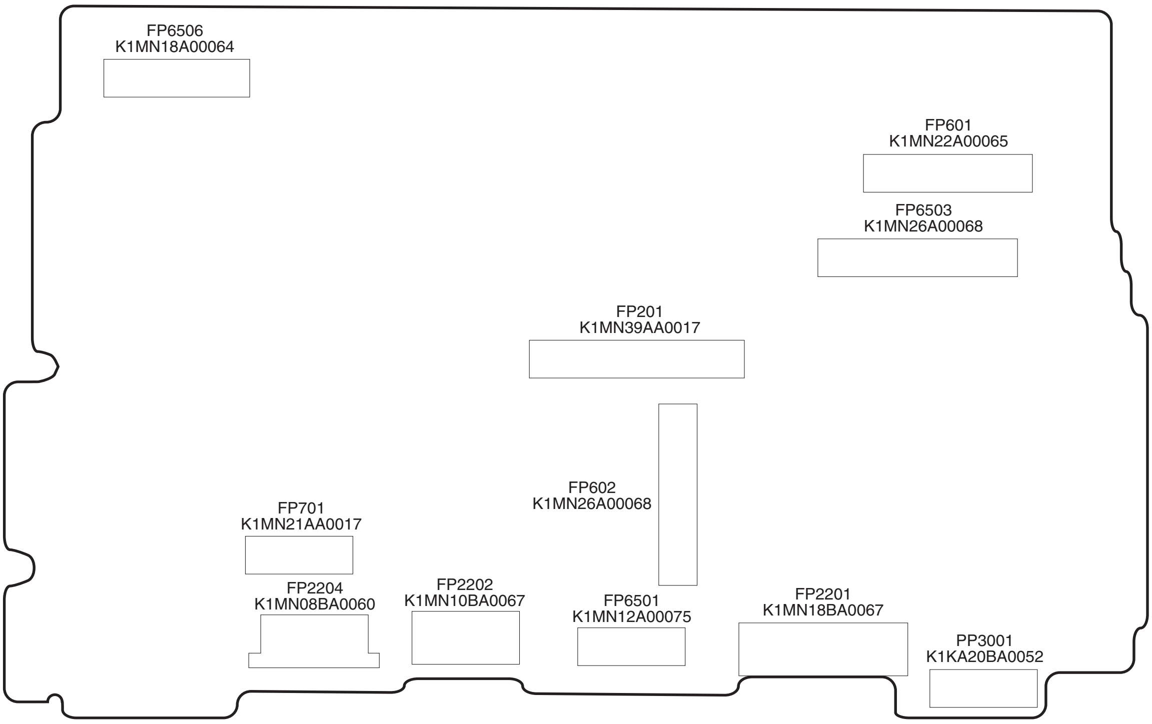
9.1.2. Checking and repairing individual circuit boards except module parts (Main P.C.B. and Mother P.C.B.)

How to use extension cables.

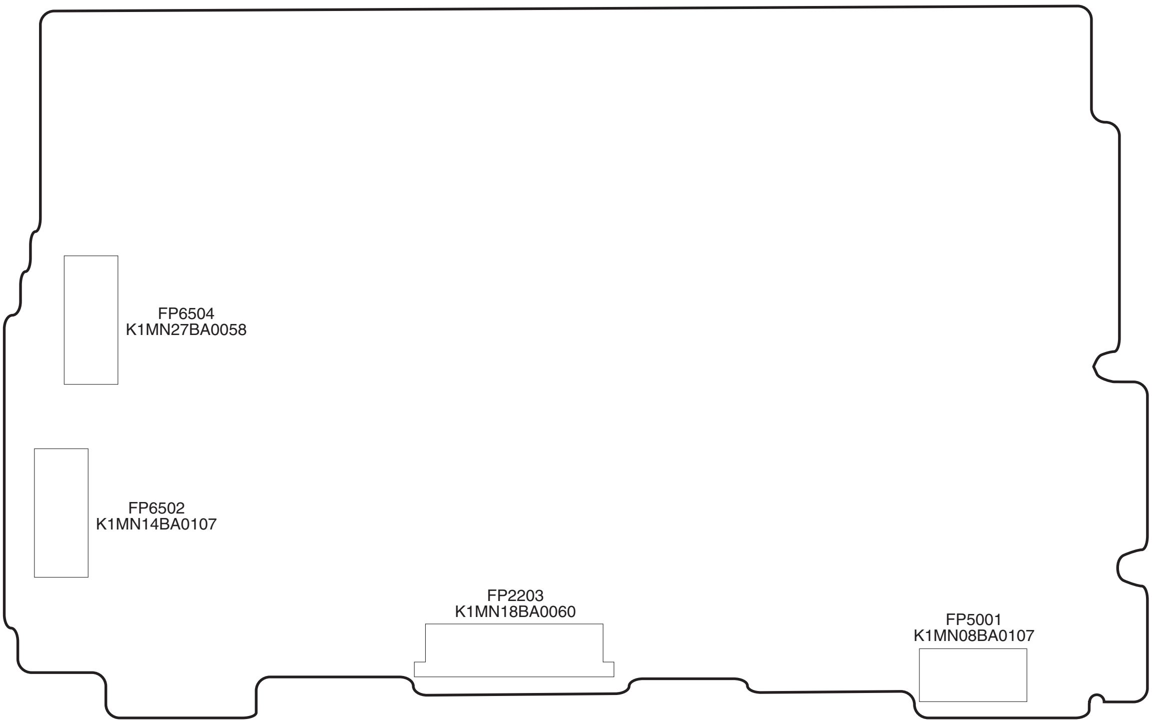


9.2. Location for Connectors of the Main P.C.B. & Mother P.C.B.

9.2.1. Main P.C.B.

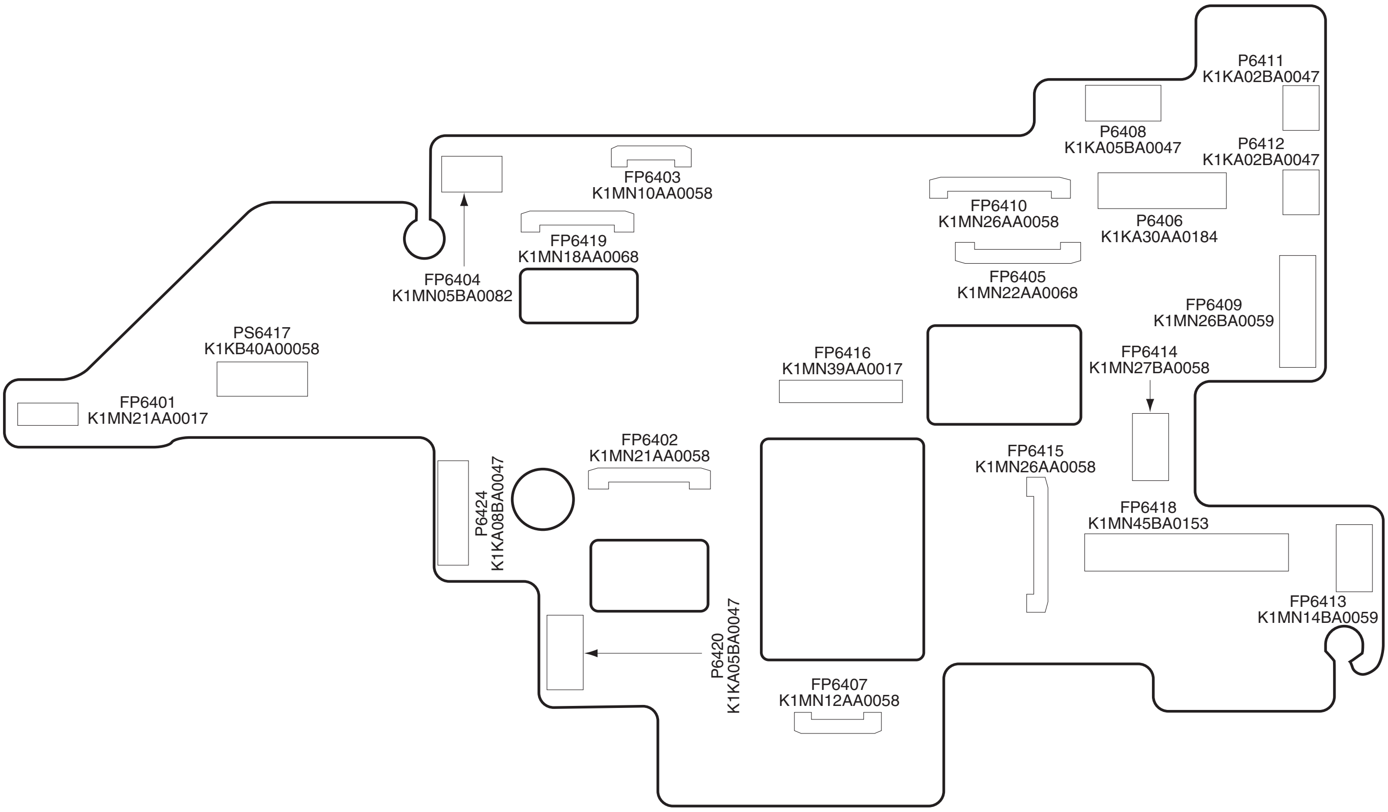


(COMPONENT SIDE)



(FOIL SIDE)

9.2.2. Mother P.C.B.



(FOIL SIDE)

9.3. Electrical Adjustment Procedures

9.3.1. Computer assisted adjustment system <TATSUJIN> adjustment.

This unit employs the computer assisted system named; “TATSUJIN PC-Adjustment” for Electrical adjustment.

9.3.2. Set-up manual for DV-Camcorder.

1. SAVE THE SOFTWARE
   Install the effective model’s TATSUJIN Software to PC: Personal Computer.
2. SET-UP (CONNECTION)
   a. Remove the EVR cover of the DV Camcorder.
      Unlock the locking tab and remove the EVR cover as shown in Fig. E1.
   b. Make a connection.
      Connect the PC, the PC/IF Unit and the DV Camcorder as shown in Fig.E2 and E3.
   c. Check the SW position on Measuning Board.
      The position of SW on Measuning Board checks as shown in Fig. E4.

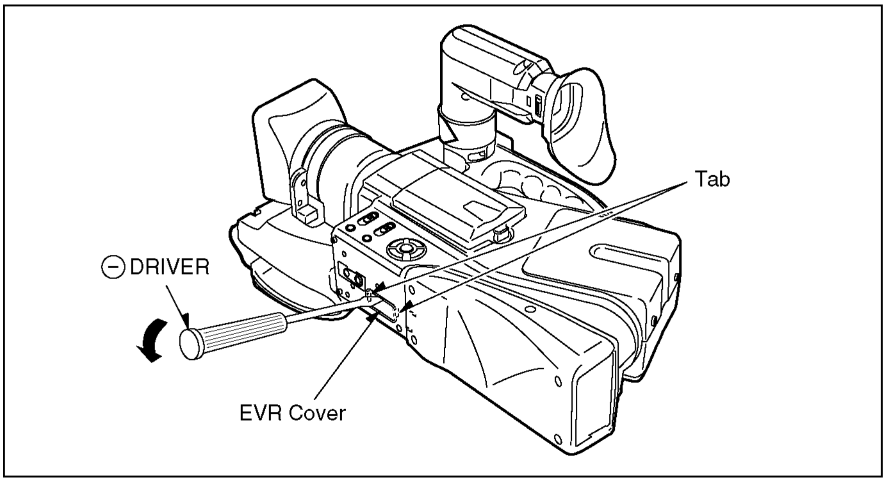


Fig. E1

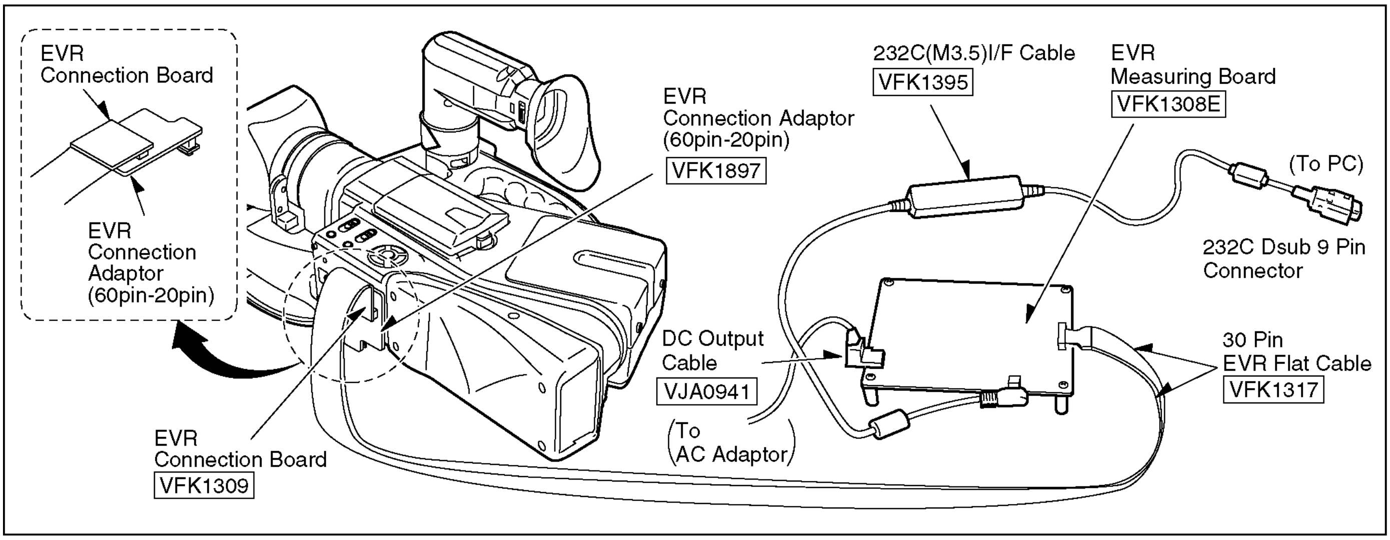


Fig. E2 Necessary Equipment & Tools for Connection.

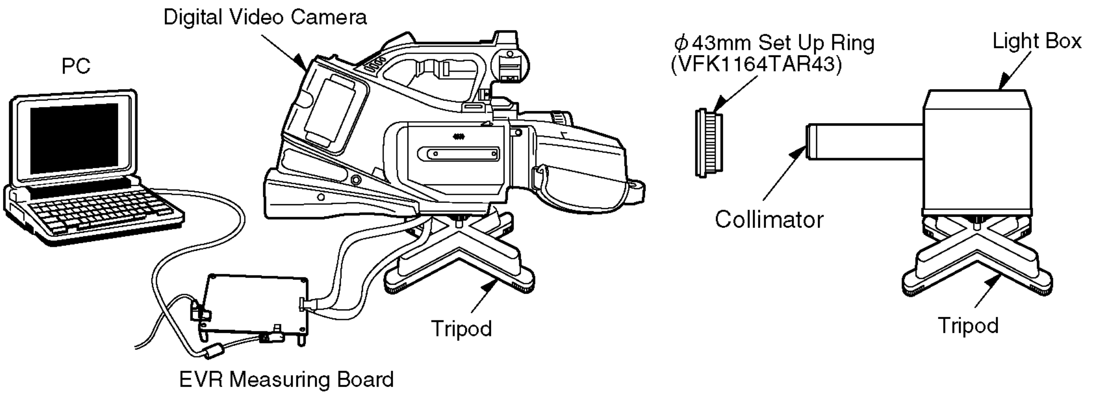
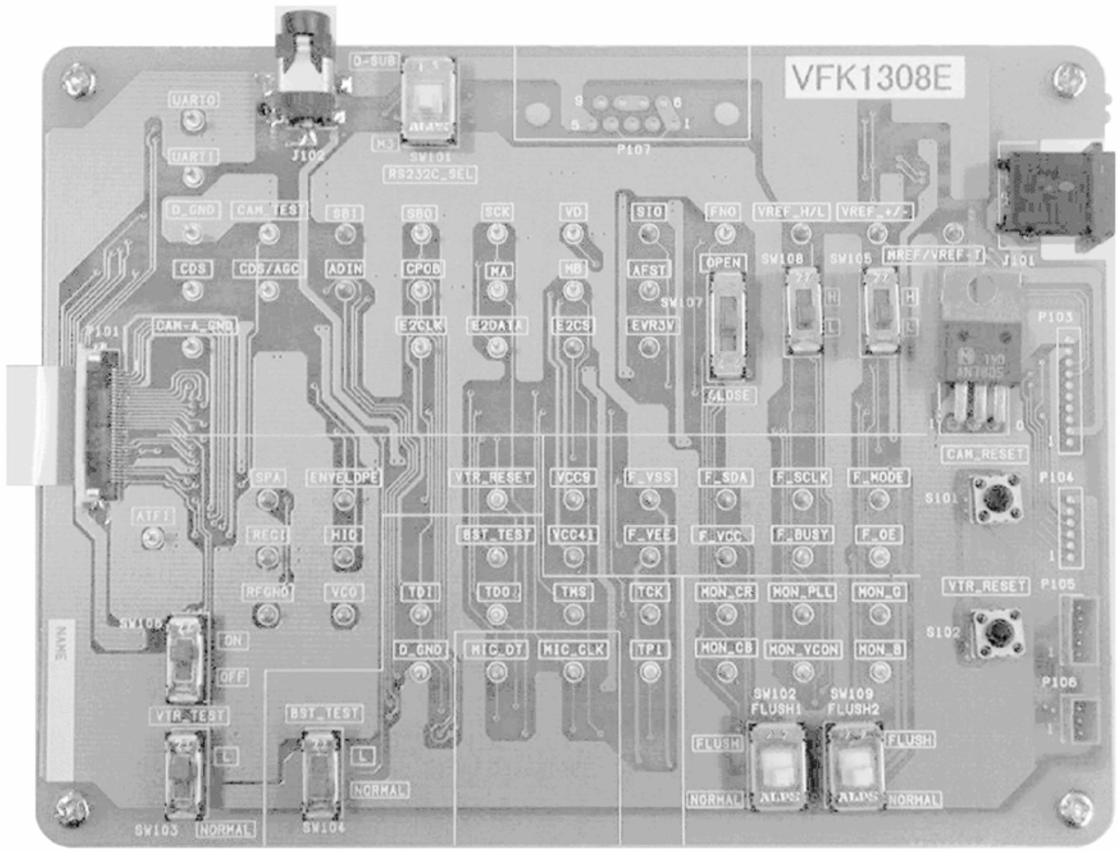


Fig. E3 Rough image of set-up connection

Ref	Name	Parts No.	Q'ty	Remarks
1	DV Camcorder	---	1	The Camcorder being adjusted.
2	Personnel Computer	---	1	With Tatsujin Software.
3	AC Adaptor	---	2	The AC Adaptor for DV Camcorder. The AC Adaptor for M. Board.
4	DC output Cable	--- VJA0941	2	The AC Adaptor for DV Camcorder. The AC Adaptor for M. Board.
5	232C (M3.5) I/F Cable	VFK1395	1	
6	Measuring Board	VFK1308E	1	
7	30 pin Flat Cable	VFK1317	2	
8	Step Up Ring	VFK1164TAR37	1	For Collimator 37mm
9	Connection Board	VFK1309	1	
10	Connection Adaptor (60-20pin)	VFK1897	1	
11	TATSUJIN PC-Adjustment Program	VF0D2003AV30	1	



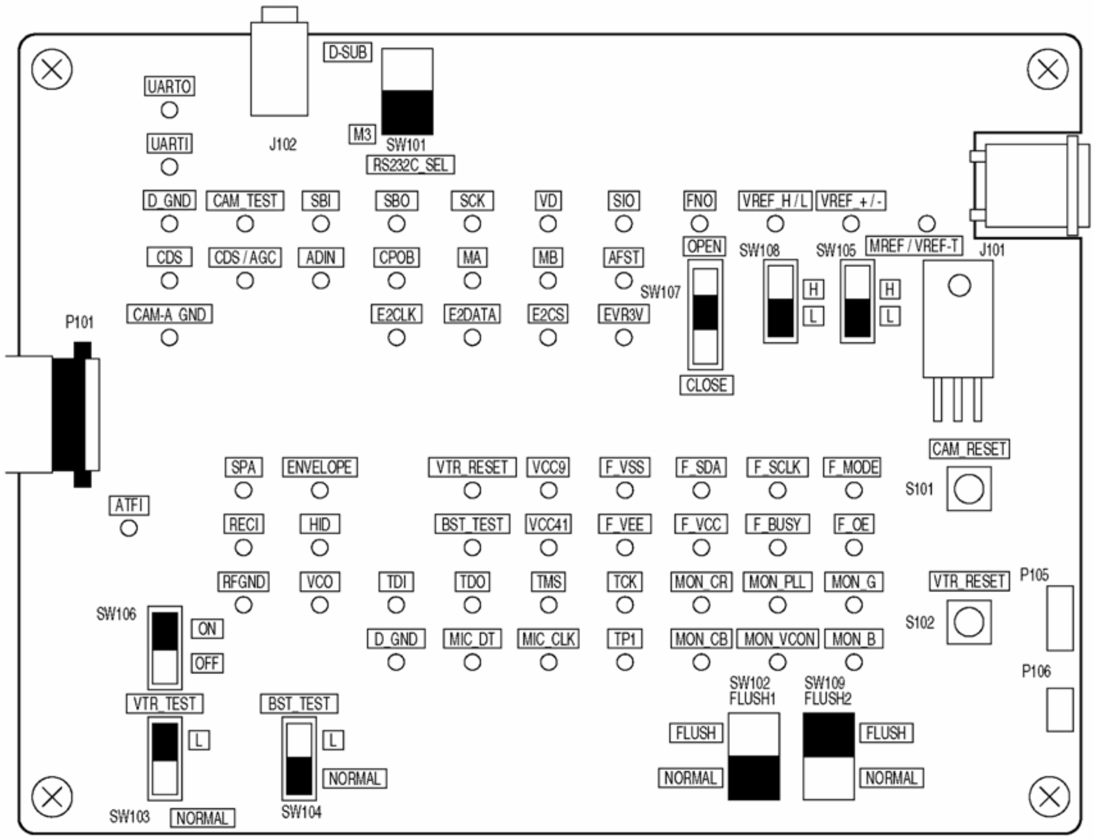


Fig. E4

(Extension cables (VFK1317 × 2pcs) ----- Measuring Board (VFK1308E) ----- 232C I/F Cable (VFK1395))

9.3.3. Set up PC-EVR adjustment program

1. Turn on the PC and install the TATSUJIN Adjustment Program into the PC.
2. TATSUJIN PC-Adjustment Program start in the following procedure.
   PC Menu : [Start] → [Program] → [win Tatsujin] → [DV Movie] → [MD10000 Series]

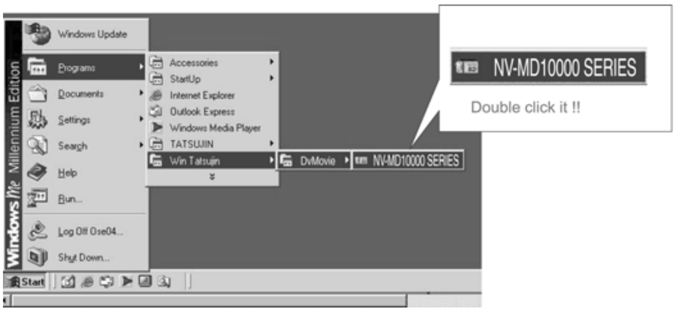


Fig. E5-1

   The main menu display will be displayed.
3. Select the desired model.
4. Turn on the camcorder. Then, click “Start.”

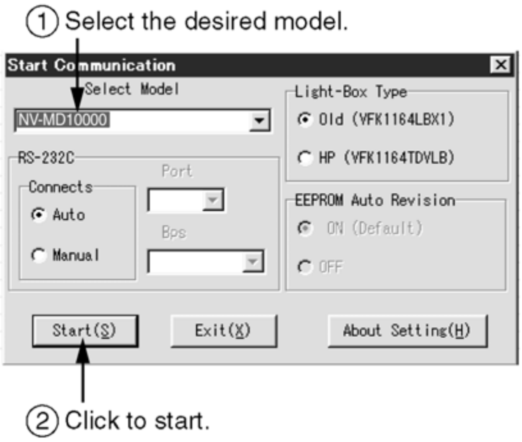


Fig. E5-2

5. The communication is complete, and the dialog will appear.
   Then, click “VCR (V) or Cam (C)” to save the EEPROM data,

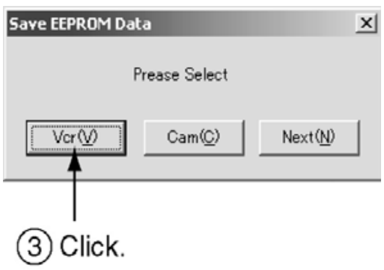


Fig. E5-3

6. Saving for EEPROM data is complete, menu will appear.
   To perform each adjustment, display the adjustment menu by selecting the desired menu from “Camera Adjust,” “Video Adjust,” “LCD Adjust” or “EVF Adjust” and select each adjustment item.

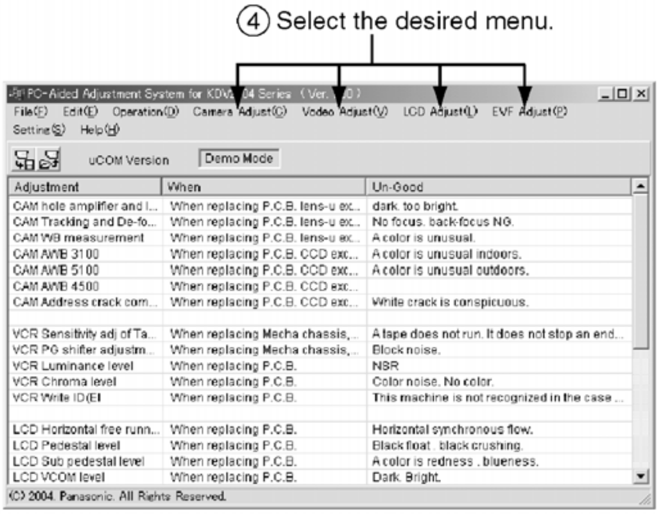


Fig. E5-4

Note:
The adjustment data is stored to the EEPROM IC after each adjustment.

7. After adjustment, to end the software, select “Exit” in File menu or close the window.

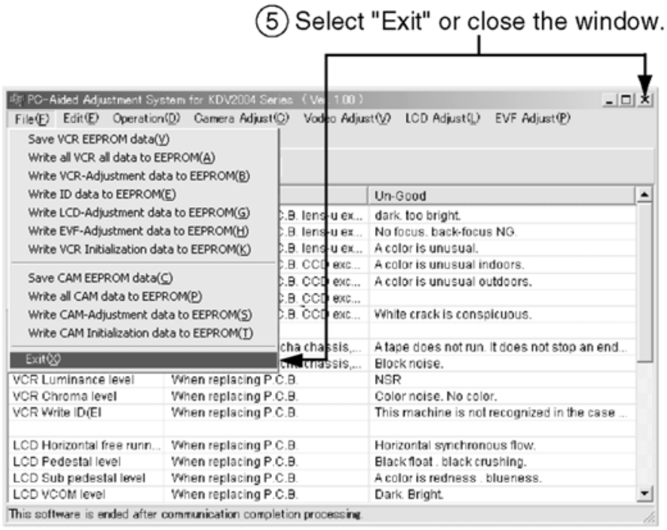


Fig. E5-5

9.3.4. Initial guideline

The table below shows which adjustments are necessary according to the unit parts and individual parts to be replaced.
Make sure to perform these adjustments shown below as necessary.

Adjustment Item	Replacement Parts	Sub P.C.B.	Main P.C.B.	IC307 (EEPROM)	IC2006 (EEPROM)	Lens Unit	Prism Unit	Iris Unit	4ht Moving Frame Unit	Cylinder Unit	Main Chassis Unit	LCD Panel	EVF P.C.B.	
Camera	CAM hole amplifier / Iris PWM	○		○		○	○	○						
	CAM Tracking and De-focus	○		○	○	○	○	○	○					
	CAM Revision CCD scratch	○		○			○							
	CAM ALC adjustment	○		○		○	○	○						
	CAM AWB adjustment	○		○			○							
Video	VCR Sensitivity ADJ. of Tape sensors		○		○						○			
	VCR PG shifter adjustment		○		○					○	○			
	VCR Luminance level		○		○									
	VCR Chroma level		○		○									
LCD	LCD Contrast		○		○							○		
	LCD Pedestal level		○		○							○		
	LCD PLL		○		○							○		
	LCD COM bias		○		○							○		
	LCD COM level		○		○							○		
	LCD White balance		○		○							○		
EVF	LED Rank Adjustment		○		○								○	

Note : ○ : Adjustment Item

9.4. Mechanical Adjustment Procedures

9.4.1. Adjustment item

Item	Adjustment at the time of the part exchange		
	Half finished goods mechanism	Clyinder	Remarks
Linearlty adjustment & BER value confirmation	O	O	

9.4.2. Adjustment procedures

lLinearlty adjustment & BER value confirmation

1. Remove the mechanism adjustment cover of tis machine as shown in Fig. D1.
2. The spcial tool at the time of electricity adjustment is connected.
   Reference of the connection figure of electricity adjustment.
3. The enbelope detection spcial tool board (VFK1641) is connected to EVR adjustment board as shown in Fig. D2.
4. The enbelope detection spcial tool board is connected to oscilloscope as shown in Fig. D2.
5. The post is adjusted with the post driver(VFK1899) so that recycles the normal tape which recorded NTSC signal and the detection wave-link become a flat as shown in Fig. D3.
   *At the time of the clyinder unit exchange unnecessary.
6. The post is adjusted with the post driver so that recycles a alignment tape(VFM3110EDS) and the detection wave-link become a flat once again.
7. Recycling the tape that video-taped it wirh this machine after adjustment, the BER value is confirmed withthe item of the BER the item of the BER confirmation of expert soft inside.

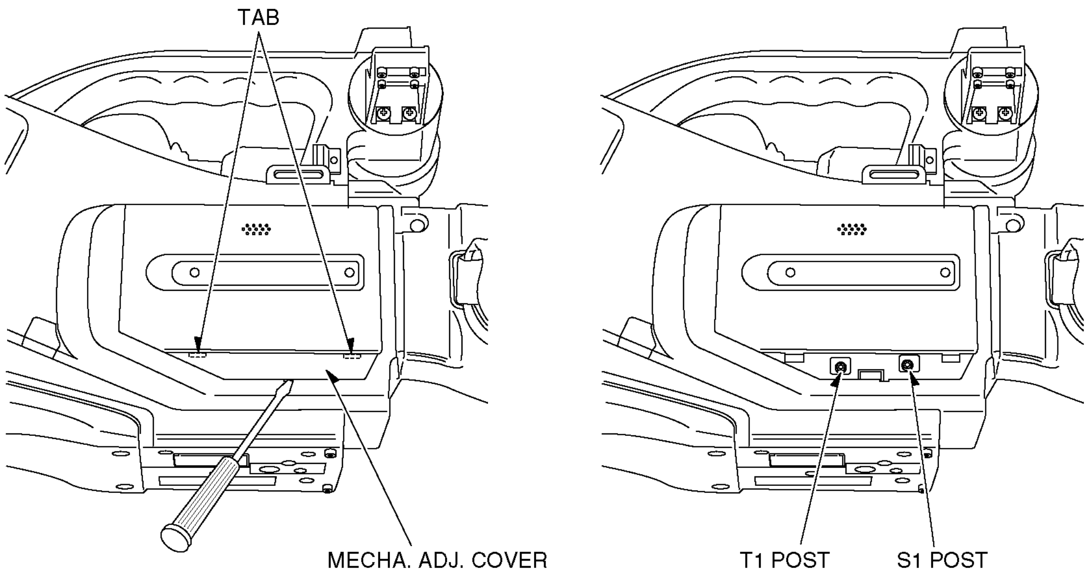


Fig. D1

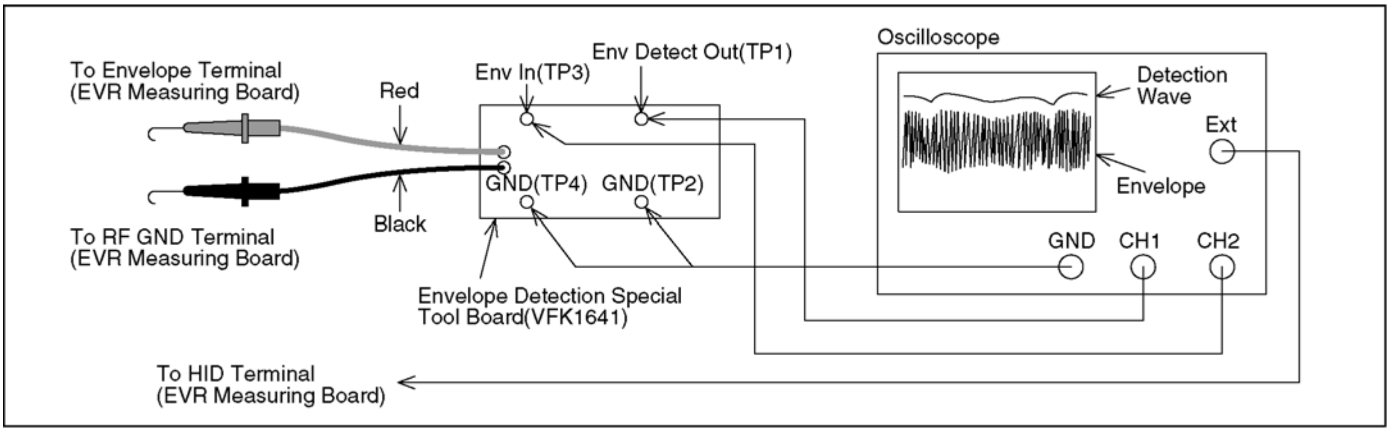

To Envelope Terminal
(EVR Measuring Board)
Red
Env In(TP3)
Env Detect Out(TP1)
Oscilloscope
Detection
Wave
Ext
Envelope
GND(TP4)
GND(TP2)
Black
To RF GND Terminal
(EVR Measuring Board)
GND
CH1
CH2
Envelope Detection Special
Tool Board(VFK1641)
To HID Terminal
(EVR Measuring Board)

Fig. D2

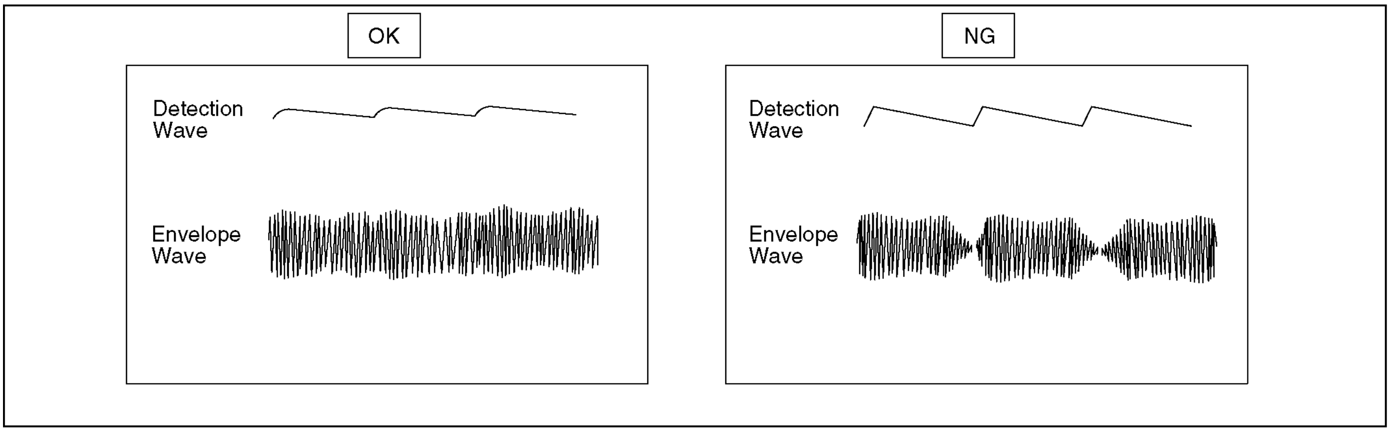

OK
NG
Detection
Wave
Envelope
Wave
Detection
Wave
Envelope
Wave

Fig. D3

10 Miscellaneous

10.1. Abbreviations

	INITIAL/LOGO	ABBREVIATIONS
A	A GND	Analogue GND
	A HASW	Audio Head Amp Switching Pulse
	A HSW	Audio Switching Pulse
	A MUTE	Audio Mute
	A ORP	Audio Overlap Pulse
	A. TR	Auto Tracking
	A0-8, 0-17	Memory Address
	A3V2	AD Converter Reference Voltage
	AB0-4	Address Bus
	AB0-4, AB12-15	Address Bus Line 0-4, 12-15
	ABSF	Focus Encoder Input
	ACI	Analogue Channel Cording IC
	AD	AD Converter
	AD	Auto Date, Analogue Digital Converter
	AD CLK	AD Clock
	AD REC	Audio Delayed REC
	AD0-6	Address
	AD0-6, ADR0-6	Address Data Line
	ADCLK	Analogue Digital Converter Clock
	ADCNT	Analogue Digital Control
	ADCS	Analogue Digital Chip Select
	A-DET	Audio Detect
	ADREC	Audio Delaied Rec
	ADUB	Audio Dubbing
	AE	Auto Expose
	AECNT	Auto Expose Control
	AEE(H)	Audio E-E (H)
	AEH	Audio Erase Head
	AEIRQ	Auto Expose Interrupt Request
	AF/MF	Auto Focus/Manual Focus
	AF DIS CS	AF DIS Chip Select
	A-FADE(L)	Audio Fade (L)
	AF-AMP	AF HALL Bias
	AFCS	Auto Focus Chip Select
	AFRP	Audio PLL Voltage Control
	AF-VN	Zoom Encoder V-Ref (–)
	AF-VP	Zoom Encoder VREF (+)
	AGC	Automatic Gain Control
	AGCCNT	Automatic Gain Control Control
	AGND	Analogue Ground/Audio Ground
	AGS	Anti Ground Shooting
	AH(P) / (R)	Audio Head (Play) / (Record)
	AHASW	Audio Head Amp Switch Pulse
	AHSW	Audio Head Switch Pulse
	AI, AO	Buffer Input, Output
	AIBCK	Bit Clock (to A/D Converter)
	AIDAT	Serial Data (to A/D Converter)
	AILRCK	L/R Clock (to A/D Converter)
	AIMCK	Master Clock (to A/D Converter)
	ALC CNT	Auto Level Control Control
	ALC MAIN	Auto Level Control Drive
	ALE	Address Latch Enable
	A-LOCK	Full Auto Switch
	A-MUT(H)	Audio Mute (H)
	ANLPTH	Analogue Loop Through High
	AORP	Audio Overlap Pulse
	APCNT	Aperture Control
	APS	Auto Power Save
	ART VH	Artifical Vertical Sync
	AT CNT	Automatic Tracking Gain Adjust
	ATF	Automatic Track Finding
	ATFCLK	41.85MHz Clock
	ATFG	Auto Track Gain
	ATL	Auto Lock Select
	ATN	Absolute Track Number
	ATR OFF(H)	Auto Tracking Off (H)
	ATV	Advanced TV
	AUDIO(N)	Audio (Normal)
	AUX	Auxiliary
	AVDD	Analogue VDD
	AVSS	Analogue Ground
	AWTB	Auto White Balance B-Y
	AWTR	Auto White Balance R-Y
B	BACK	Back-up
	BACK UP	Microcomputer Back-up
	BACK VDD	Back-up Power
	BATT	Battery
	BATT ALARM	Battery Alarm
	BATT REF	Reference Voltage for Battery
	BCB	B Carrier Balance
	BCBM(B-Y)	B-Y Carrier Balance
	BCBM(R-Y)	R-Y Carrier Balance
	BD0-7	REC/Play In/Out Buss
	BDCK	Standard Bus Data Clock (9MHz)
	BDEN	Standard Bus Data Enable
	BEND	Data Block End Request
	BF	Burst Flag Pulse
	BFA	Burst Flag Pulse for Encorder
	BFO/BFI	Burst Flug Input/Output
	BI, BO	Buffer Input, Output
	BL	Back Light
	BL ON	Back Light ON (L)
	BL4V	Back Light 4V
	BLC 0, 1	Back Light Y Control Out, In
	BLDI/O	Back Light Drive Input/Output
	BLK	Blanking Pulse
	BLKA	Blanking for Encorder
	BLKA	Blanking Pulse for Encorder
	BLKI/O	Blanking Pulse In/Out

	INITIAL/LOGO	ABBREVIATIONS		INITIAL/LOGO	ABBREVIATIONS
	BLKZ	Blanking Pulse for Zoom Encorder		CH1	Channel 1 (Odd Field)
	BM	Balance Modulator		CHR	Character
	BQUIET	Bus Out Control Signal		CHR BACK	Character Back-up
	BUF IN/OUT	Buffer In/Out		CHR MIX	Character Mix
	B-Y KB	B-Y Carrier Balance		CI, CO	Buffer In/Out
	B-YO	B-Y Signal Out		CI,CO	Buffer Input & Output
				CIF	Control Signal Forward Input
C	C A In/Out	Pre-Aperture In/Out		CIF, CIR	Positive Control Pulse, Negative Control Pulse
	CAPSTP	Capstan Stop Flag		CIR	Control Signal Reverse Input
	C CNT	Colour Control		CK	Clock
	C SYNC	Composite Sync Signal		CL/CLK	Clock
	C/N	Carrier/Noise		CLASS	Classefication Signal for Compress (DCT/VLC)
	C0-7, C00-07	Chrominance Signal 0-7		CLASS 0.1	Class Control Signal Durring DCT/VLC
	CAGAIN	Aperture Gain Control		CLK135	13.5MHz System Clock
	CAM	Camera		CLK18	18MHz System Clock
	CAM CLK	Camera Clock		CLK2	Clock 2 (824XFH: 12.875MHz)
	CAM RST	Camera Reset		CLK246	24.576MHz Clock
	CAM SIOC	Camera Serial In/Out Contol		CLK27	27MHz System Clock
	CAM T	Camera Test		CLK450	450KHz Clock
	CAM TL	Capstan Trque Limit		CLKDCLK	Digital Clock
	CAP EC	Capstan Trque Control		CLK-PH	Clock Phase Control
	CAP P(H)	Capstan Power On (H)		CLK-REF	Reference Clock
	CAP R/F/S	Capstan Reverse (H)/Stop (M)/Forward (L)		CLP-RST-H	Clamp Reset High Signal
	CAP SW	Capstan Power Control Switch		CLX	TFT X-axis Transmission Clock
	CAPSTP H	Capstan Stop Flag (Stop High)		CLX, CLX1-4	Shift Clock for X Direction (LCD Panel)
	CAPVM	Capstan Motor Current		CLY	Shift Clock for Y Direction (LCD Panel)
	CAPVS	Capstan Motor Power Control Switch		CLY	TFT Y-axis Transmission Clock
	CAS	Compresion, Audio Process, Shuffling/Deshuffling		CLY FG	Cylinder FG Signal
	CAS	Memory Address Strobe (Active Low)		CMEMO0-3	Chroma Memory Output Signal 0-3
	CASDOWN, DWN	Cassette Down (L)		CMIX	Character Mix
	CB, CR	Chroma B, Chroma R		CMO	Chrominance Memory Output
	CBLK	Composite Blanking Pulse		COMPC	Position Detection Pulse
	CC	Channel Cording		COM RDY	Serial Enable Signal
	CCA	Curent Drive Control		CMODE	Camera Mode
	CCA	Current Control Amp		CNCLK	Clock
	CCD	Charge Coupled Devise		CNR	Chrominance Noise Reduction
	CCW	Counterclockwise		CNT, CONT	Control
	CD SP0-7	Digital Chroma		CO	Control Out
	CDS	Correlate Double Sampling Signal		CO0-7	Chrominance Output 0 to 7 (Digital)
	CDS1, 2	Sampling Pulse for CCD Output Signal		COM	Common
	CE	Chip Enable		COM RDY	Serial Transmission Enable
	CE	Control Pulse Erase		COMB	Comb Filter
	CEC	Capstan Error Code		COS EQ	Cosin Equalizer
	C-ERA(H)	Control Erase (H)		CP	Clamp Pulse
	CFEM	Chrominance Memory Signal		CP ON(H)	Camera Power On(H)
	CFM	Chrominance Field Memory		CP2, 20	Clamp Pulse
	CFM1-4	Chroma Field Memory Signal		CP2A, CP2O	Encoder Clamp Pulse
	CG CLK	Character Generator Clock		CPN	Component Signal
	CG CLK DATA	Clock Generator Data		CPOB	Clamp Pulse for Optical Blanking
	CG DATA	Character Generator Data		CPS	Composite Signal
	CGC	Chrominance Gain Control		CPV	Gate Scan Clock
	CGCS	Character Generator Chip Select		CR OUT	Pre Apature Out
	CGO	Character Generator Serial Data		CR POW SW	Camera Remote Power On Switch
	CH	Charge		CRA	Aperture Gain Control

	INITIAL/LOGO	ABBREVIATIONS
	CRA	Pre Apature Gain Control
	CRST	Camera Reset
	CS	Chip Select
	CS 0-7	Chrominance Signal Out 0-7
	CSEL	Clock Phase Select
	CSI 0-7	Chrominance Signal In 0-7
	CTSW	Crosstalk Switch
	CURR	Current
	CW	Clockwise
	CYL EC	Cylinder Motor Trque Control
	CYL PG	Cylinder Motor PG
	CYL VM	Cylinder Motor Current or Power
D	D CLK	Digital Clock
	D MODE	Digital Mode Switch Signal
	D01-03	Zoom 01-03
	DA UV SEL	D/A Convertor U/V Select
	DAC	Digital Analogue Converter
	DAG	Digital Analogue Ground
	DB0-7	Data 0-7
	DB0-7	Microprocessor Data
	DCC	DC Clamp Control
	DCCNT	DC Control
	DCI	Digital Channel Cording IC
	DCLR	Digital Clear
	DCP	Digital Clamp Pulse
	DCS-CLK, DA	CAS & DV I/F Serial Clock
	DC-STP1	DCS Serial Start
	DC-STP2	DCS Serial Stop
	DCT	Discrete Cosine Transform (Compression)
	DCX7	Serial Data
	DEDP 0-3	Playback Data
	DEDR 0-3	Rec Data
	DEMO	Demodulation
	DEMP	A/D Convertor Empahsis Control
	DEMP	De-Emphasis
	DFD 0-7	Encode Data In/Out Between Shaffling Memory
	DFD0-7	Encode Input/Output Signal for Shuffling Memory
	DIBDCK	Bit Clock
	DICLK	Digital Clock
	DIDAT	Serial Data
	DIDAT	Serial Data Durring Digital Audio In
	DIF	Digital Interface
	DILRCK	L/R Clock
	DILRCK	Serial Clock Durring Digital Audio In
	DIMCK	Master Clock
	DIMCK	Mater Clock Durring Digital Audio In
	DIO 1-8	Data In/Out
	DIOS	Data In/Out Select Control Signal
	DIOS	Select Signal for Digital In/Out
	DIS	Digital Image Stabilizer
	DIS R/B	Digital Image Stabilizer Read (H)/Busy (L)
	DIS R/B	DIS IC Rady/Busy
	DIS/KAND	Digital Image Stabilizer/Sensitivity
	DISCS	Dis Chip Select
	DISP	Display
	DL	Delay Line
	DOBCK	Audio A/D Convertor Bit Clock
	DOCTL	Data Output Control Signal
	DODAT	Serial Data (to D/A Converter)
	DOLRCK	Audio A/D Converter LR Clock
	DOLRCK	L/R Clock (to D/A Converter)
	DOMCK	Audio A/D Converter Master Clock
	DOMCK	Master Clock (to D/A Converter)
	DQ 1-16	Memory Data
	DRAM CAS	D-RAM Colum Address Strobe
	DRAM OE	D-RAM Out Enable
	DRAM RAS	D-RAM Read Address Strobe
	DREC	AV Delayed REC Start Pulse
	DRK	Dark (LPF Switch for Auto Focus)
	DS1, 2	Double Sampling Pulse
	DSF 0-7	Data In/Out for Shaffling Memory
	DSF 0-7	Input/Output Data to Shuffling Memory (18MHz)
	DSP	Digital Signal Processor
	DSP R/B	DSP IC Rady/Busy
	DSP-48K-H	DSP IC Clock Select
	DSTB	Data Stobe Signal
	DSV	Digital Sum Variation
	DV	Digital Video
	DVB	Digital Video Broadcast
	DVC	Digital Video Cassette
	DVDD	Digital VDD
	DVIO	Digital Video Input Output
	DVSS	Digital Ground
	DX	Shift Data for X Direction (for LCD)
	DY	Shift Data for Y Direction (for LCD)
	DY	TFT Y-axis Shift Data
	DZ	Digital Zoom
E	E Snap	Electric Snap Shot
	E ZM	Electric Zoom
	E2 CS or E2P CS	EEPROM Chip Select
	E2 R/B	EEPROM Rady/Busy
	E2P	EEPROM
	EARP	Earphone
	EC	Torque Control
	ECC	Error Correction Cording
	ECM	Electric Condencer Mic
	ECR	Reference Voltage for Capstan Torque
	EDA	Error Correction, DCI, ATF Servo
	EE CS	EEPROM Chip Select
	EE R/B	EEPROM Read (H)/Busy (L)
	EEPROM	Electric Erasable Programable Read Only Memory
	EIS	Electric Image Stabilizer (DIS)
	EMP	A/D Convertor Emphasis Control
	ENAB	Enable
	ENV	Enverope
	EOB	End of Block

	INITIAL/LOGO	ABBREVIATIONS
	EQ	Equalizer
	EVF	Electric View Finder
	EXT DC	External DC (AC Adaptor)
	EXT DC(H)	AC Adaptor DC (H)
	EXT NOREG	AC Adaptor 6V
	EXT S DATA	Serial Data for Edit
	EXT SCK	Serial Clock for Edit
	EZOOM	Electric Zoom
F		
	F ENC	Lens F-Value
	FACT MODE	Factry Mode (not used in the service)
	FB	Feed Back
	FC	Saw Tooth Signal In
	FCK	Clock
	FCO	Saw Tooth Signal Generator
	FENC	Focus Encoder
	FEND	Frame End Pulse
	FH2B	FH/2 (15.625KHz / 2=7.8125KHz)
	FIX OSD	Auto Tracking Off (H)
	FLICK	Flicker Output
	FM	Field Memory
	FM0-7	Field Memory 0-7
	FMCO0-3	Field Memory Chrominance Out 0-4
	FMDIR	Focus Motor Direction
	FMOEM	Field Memory Enable
	FMOEO	Field Memory Enable
	FMT1-4	Focus Motor Terminal 1-4
	FMY00-07	Field Memory Luminance Out 0-7
	FMYI0-07	Field Memory Luminance In 0-7
	FNO	F Value
	FPS	Frame Refference Signal
	FR	Capstan Reverse High
	FRP	Frame Refference Pulse
	FRPSO	Frame Start Pulse
G	G1, G2, G3	Gap 1, 2 and 3
	GCA	Gain Control AMP
	GCNT	Gain Control
	G-CNT	AGC Adjustment
	GCTRL	Gain Control
	GENE	Generator
	GF	FG AMP Terminal
	GSW	Ground for Switching Power
H	H/M/N	Hi-Fi / Mix / Normal
	H/N	Hi-Fi / Normal
	H1, 2	H. CCD Drive Pulse
	HAP	Horizontal Aperture
	HASW	Head AMP Switching Pulse
	HB	Hall Bias
	HBR SET	High Brightness Set
	HBRST	High Brightness Set
	HCLR	High Clear
	HCP	Shift Clock for Horizontal Drive

	INITIAL/LOGO	ABBREVIATIONS
	HD	Horizontal Drive Pulse
	HDTV	High Definition TV
	HEX	Hexadecimal
	HG	Hall Gain
	HID	Head Switching Pulse
	HLT	High Bright Signal
	HALL IN(+), (–)	Input Signal from Hall IC
	HP	Headphone
	HPF	High Pass Filter
	HSE	Modulated Data Output
	HSP	Timing Pulse for Shaffling Memory
	HSS	Horizontal Sync Signal
	HSW	Head Switching Pulse
	HS-WT	High Speed Zoom
	HSZ	High Speed Zoom
I	I/F	Interface
	I-2 C	Inter Integrated Circuit
	ID(H)	Wide Television (H)
	IMP	Inter Microprocessor Protocol
	INF	CCD Input Signal 1
	INF	Input Frame Signal
	INS	CCD Input SIgnal 2
	INTER	Interval Recording
	INV	Inverter
	IOU	R-Y Analogue Signal Output
	IOV	B-Y Analogue Signal Output
	IOY	Y Analogue Signal Output
	IR	Infrared Rays
	IRDET	Imfrared Ray Detection
	IREF	Current Adjustment Terminal
	IRIS/SH	Iris / Shutter Control
	IRQ	Interrupt Request
	ITI	Insert & Track Information
J	JPEG	Joint Photographic Image Cording Experts Group
K	KANDO	Digital Gain Up
	KB	Carrier Balance
	KEY IN	Key Scan
	KND	Digital Gain Up
	KNEE	Luminance Compensate
L	LCD	Liquid Crystal Display
	LCD P(L)	LCD Power On (L)
	LD	Load Pulse
	LDD	Liquid Direct Drive
	LEDCNT	LED Control
	LI-BATT	Lithium Battery
	LOAD	Loading
	LOAD F, R	Loading Direction (F: Forward / R: Reverse)
	LPF	Low Pass Filter
	LRMONO	Monoral Audio (L + R)
	LSB	Least Significant Bit

	INITIAL/LOGO	ABBREVIATIONS		INITIAL/LOGO	ABBREVIATIONS
	LVL	LPF Switch for Auto Focus	P	P SW	Power Switch
				PB1-3	PNP Base 1-3
M	M1-3	Motor Coil Terminal 1 to 3		PBCTL	Play Back Control
	MA0-5	Microprocessor Address Data 0-5		PBCTL	Pre-Branking Control
	Mbps	Megahertz Bit Per Second		PBH	Head Amp Switch
	MD	Modulation		PBLK	Pre-Blanking (Pulse)
	MD0-7	Microprocessor Data 0-7		PC1-3	Corrector of PNP Transistor
	MDT0-7	Microprocessor Data 0-7		PCBM	Carrier Balance
	ME (TAPE)	Metal Evaporated (Tape)		PCH	Phase Compensator (Hall AMP)
	MENB	Focus Motor Enable		PCI	Phase Compensator (Current)
	MFF	Manual Focus Far		PCO	Phase Compensator Out
	MFN	Manual Focus Near		PCS	Switching Power Control
	MHSYNC	Monitor Horizontal Sync Signal		PCV	Phase Compensator (Voltage)
	MIC	Memory In Cassette		PE	Emitter of PNP Transistor
	MIG	Meta In Gap		PED	Pedestal
	MIX N.R.D.	Non Rec Data Mix		PEDECNT	Pedestal Control
	MOD	Modulation		PENO	Alarm (L)
	MOUT	Mic Out		PFP	Pilot Frame Position
	MP (TAPE)	Metal Particle (Tape)		PGA, B	Power Ground A, B
	MPEG	Moving Picture Image Cording Experts Group		PGC	Pulse Generator Comparator
	MPEG2	Moving Picture Image Cording Experts Group Phase 2		PGI	Pulse Generator Input
	MRST	Focus Motor Reset		PGMM	Pulse Generator Monostable Multivibrator
	MSB	Most Signal Bit		PGO	Output of Pulse Generator AMP
	MVSYNC	Monitor Vertical Sync Signal		PMODE	Select Signal for Normal / Wide Screen
				PON	Power On
N	N/F	Near/Far Focus		POR	Power On Reset
	N/P	NTSC/PAL		POSCOM	Common Position
	NB1-3	Base for NPN Transistor		PREAMP	Pre-AMP
	NC	No Connection		PREBLK	Pre-Blanking
	NC1-3	Corrector of NPN Transistor		PT	Protect for V Voltage
	NCLR	Power On Reset		PWM	Pulse Width Modulation
	NCP1	Clamp Pulse		PWMB	Pulse Width Modulation Pulse
	NCP2+VDH	Clamp Pulse + Horizontal Drive Pulse			
	NCP2+VDM	Clamp Pulse + Gate Pulse	Q	Q2H	Source Output Select
	NDE	Non Liner De-Emphasis			
	NE	Emitor of NPN Transistor	R	R CTL P	Recorded Control Pulse (+)
	NLE	Non Liner Emphasis		R CTL R	Recorded Control Pulse (–)
	NR	Noise Reduction		R/B	Read/Busy
	NRD	Non Rec Data		R/L	Direction Control for Data Transmition
	NRD BLK	Non Rec Data Blanking		RA	Recording AMP
	NRD CLK	No Rec Data Clock		RA1	Rec AMP 1
	NRE	Read Enable Input (Low Active)		RAC AC	Rec Audio Current
	NWE	Write Enable (Low Active)		RAD	Read Address Data
				RAE	Read Address Enable
O	OB	Optical Black		RB	Read Busy
	OBCNT	Optical Black Control		R-B	R Bias
	OBREF	Reference Voltage for Optical Black Control		RCB	R Carrier Balance
	OE	Output Enable		RE	Read Enable
	OFH	Horizontal Counted Down Clock Signal (Reference)		RE(F), (S)	Rotary Erase Head Transformer
	OFS	Offset		REB	R Bias
	OP	Operation AMP Output		REC CC	Rec Current Control
	OSD	ON Screen Display		REC CCNT	Rec Current Control
	OVL	Overlap Pulse		RECCTRL	Recording Control Pulse
	OZ	Optical Zoom		RECI	Rec Amp Switch

INITIAL/LOGO		ABBREVIATIONS	INITIAL/LOGO		ABBREVIATIONS
	RENCF	Lens Control (Forward)		SWB	Switching Pre-Drive Pulse
	RENCR	Lens Control (Reverse)		SYL EC	Cylinder Torque Control
	RERASE	Rotary Erase Head		SYL FG	Cylinder FG
	RGBIV1-2	1V Inverted Signal 1-2			
	RGO R/G OFF	Offset Voltage for AWT R	T	T PHOT	Take-up Photo Transistor
	RSF	Capstan Direction (Reverse / Stop / Forward)		TBC	Time Base Conntrol
	RST	Reset		TFT	Thim Film Transistor
	RSTB	R Strobe		TH	Thermostat for Battery
	RSTPWD	Reset Power Down Input		TI	Test Mode Select
	RSTR	Reset Read		TL	Torque Limit
	RSTW	Reset Write		TM	Sub Code
	RT	Saw Tooth Terminal		TMD	Sub Code Data
	RVCO	Resister for Oscillation		TRE	Tracking Error Signal
	RW	Read Write		TREEL(P)	Take-up Reel (Pulse)
	RWAE	Read Write Enable		TRFIX	Tracking Fix
				TRIWAVE	Tracking Wave
S	S PHOT	Supply Photo Transistor		TRP	Tracking Position
	S/H	Sampling Hold		TRP	Trap
	S/S	Start/Stop		TSR	Head Switching Refference
	SBD	Serial Data		TST	Time Scale Transfer
	SBI	Serial Data Input			
	SBO	Serial Data Output	U	U/V SEL	R-Y/B-Y Select Signal
	SBT	Serial Clock		UNLOAD	Un-Loading
	SCAN0-5	Key Scan 0-5		UNRE	Microprocessor Read Enable
	SCK	Serial Clock		UNWE	Microprocessor Write Enable
	SCR	Search		UV	R-Y/B-Y
	SCR, S.C.R.	Still Cue Review		UV SEL	R-Y/B-Y Select Signal
	SEG.	Segment			
	SET	White Balance Set	V	V1-V4	V. CCD Drive Pulse
	SH/IRIS	Shutter/Iris Control		VB	VH Filter Switching
	SHIFT	Capasitor for Phase Shift		VCE	Power Terminal
	SI	Serial Data Input		VCNTL	Video Control
	SIC	Shift In Clock Input		VCO	Voltage Control Oscillator
	SIOC	Serial In/Out Control		VCP	Shift Clock Output for Vertical Drive
	SMCE	Shaffling Memory Chip Enable		VCTLD	Video Control
	SMRS	Shaffling Memory Read Strobe		VCTRL	Voltage Charge Control
	SMWE	Shaffling Memory Write Enable		VD	Vertical Drive Pulse
	SMWS	Shaffling Memory Read Strobe		VDDX	X Drive Power for Colour LCD
	SNAP	Snap Shot		VDDXY	XY Drive Power for Colour LCD
	SNS LED	Sensor LED		VDDY	Y Drive Power for Colour LCD
	SO	Serial Data Output		VDREC	Video Delayed Rec
	SPA	ATF Smapling Pulse		Vgg	Voltage for Gate IC
	SPEN	8 Bit Shift Register Enable		Vgl	Gate off Voltage
	SPK	Speaker		VID	Video Signal Out
	SPO	Reset for Switcing Power		VIN	Video In
	SPST	8 Bit Shift Register Strobe		VITC	Vertical Interval Time Code
	SREELP	Supply Reel Pulse		VITERBI	One of Signal Detection Method
	SRT	Start		VL	Low Voltage
	SSA	Start Sync block Area		VLC	Variable Length Cording
	SSW	Select Signal for Low Pass Filter		VLOCKP	Artificial Sync Pulse
	ST5V	Safety Tab 5V		VLP	Artificial Sync Pulse
	STAB	Safety Tab Switch		VM	Motor Voltage
	STB	Stand by Signal		VMD	Velocity Mode Data
	STB	Strobe		VMD1-3	Electric Shutter Mode

INITIAL/LOGO		ABBREVIATIONS	INITIAL/LOGO		ABBREVIATIONS
	VMODE	NTSC/PAL Select Switch			
	VMVH	VH Filter Switching			
	VORP	Video Overlap			
	VRB	Voltage Refference Bottom			
	VRBS	Voltage Refference Bottom Output			
	VREF1R3V	Refference Voltage 1.3V			
	VREF3R3V	Refference Voltage 3.3V			
	VREFH	Refference Voltage High Side			
	VREFL	Refference Voltage Low Side			
	VRI	Refference Voltage Input			
	VRO	Refference Voltage Output			
	VRT	Voltage Refference Top			
	VRTS	Voltage Refference Top Output			
	VS	Switching Comparator			
	VSS	Vertical Sync Signal			
	VSSX	X Driver Power for Colour LCD			
	VSSXY	X-Y Driver Power for Colour LCD			
W	W/N	Mode Select for Window Mode			
	W/N	Wide / Normal			
	WAD	Write Address Enable			
	WAE	Write Address Enable			
	WAERAE	Write Address Enable			
	WARI	Interrupt			
	WB	White Balance			
	WE	Write Enable			
	WEM	Memory Write Enable			
	WHD	Wide Horizontal Drive Pulse			
	WIDE A	Wide Zoom			
	WSB	B AGC Control			
	WSR	R AGC Control			
	WTV	Wide TV			
X	XP	FG Logic Reset			
Y	Y FM0-7	Y Field Memory 0-7			
	YCE	Cylinder Error Code			
	YGC	Y Gain Control			
	YMO 0-7	Y Field Memory 0-7			
	YNCST	Noize Canceller			
	YNR	Luminance Noise Reduction			
	YSDP 0-7	Digital Y Out 0-7			
Z	Z.ENC	Zoom Encoder			
	Z.MIC	Zoom Mic			
	ZENC	Zoom Encoder Output			
	ZMDIR	Zoom Drive			
	ZMEN	Zoom Enable			
	ZMT	Zoom Motor Tele Side			
	ZMT (+)/(–)	Zoom Motor (+)/(–)			
	ZMTER	Zoom Motor Tele Side			
	ZMW	Zoom Motor Wide Side			
	ZSW	Zoom Switch			

VM0509039CE

Service Manual

Diagrams and Replacement Parts List

Digital Video Camera

NV-MD10000GC
NV-MD10000GK

Vol. 1

S1. About Indication of The Schematic Diagrams

S1.1. Important Safety Notice

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1. Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "$" mark.
2. It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.
3. The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.
4. Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.
5. The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.
6. Use the parts number indicated on the Replacement Parts List .
7. Indication on Schematic diagrams:

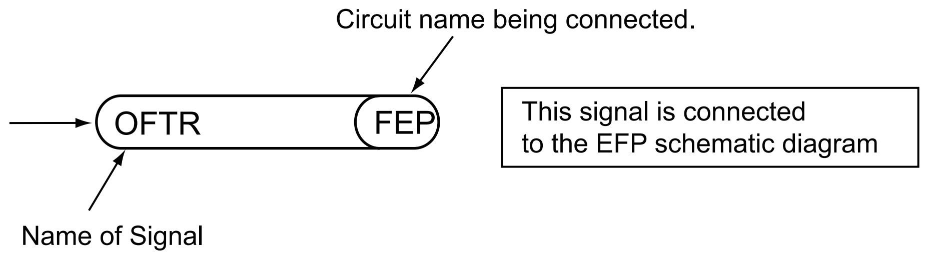


Table of contents

S2. Voltage Chart

S2.1. Monitor P.C.B.

REF No.	PIN No.	REC	PB	EE
QR6401	1	0	0	0
QR6401	2	2.9	2.9	2.9
QR6401	3	2.9	2.9	2.9
QR6401	4	0	0	0
QR6401	5	0	0	0
QR6401	6	0	0	0

S2.2. EVF P.C.B.

REF No.	PIN No.	REC	PB	EE
Q801	E	0.6	0.6	0.6
Q801	C	1.7	1.7	1.7
Q801	B	1.3	1.3	1.3

S2.3. Mic Jack P.C.B.

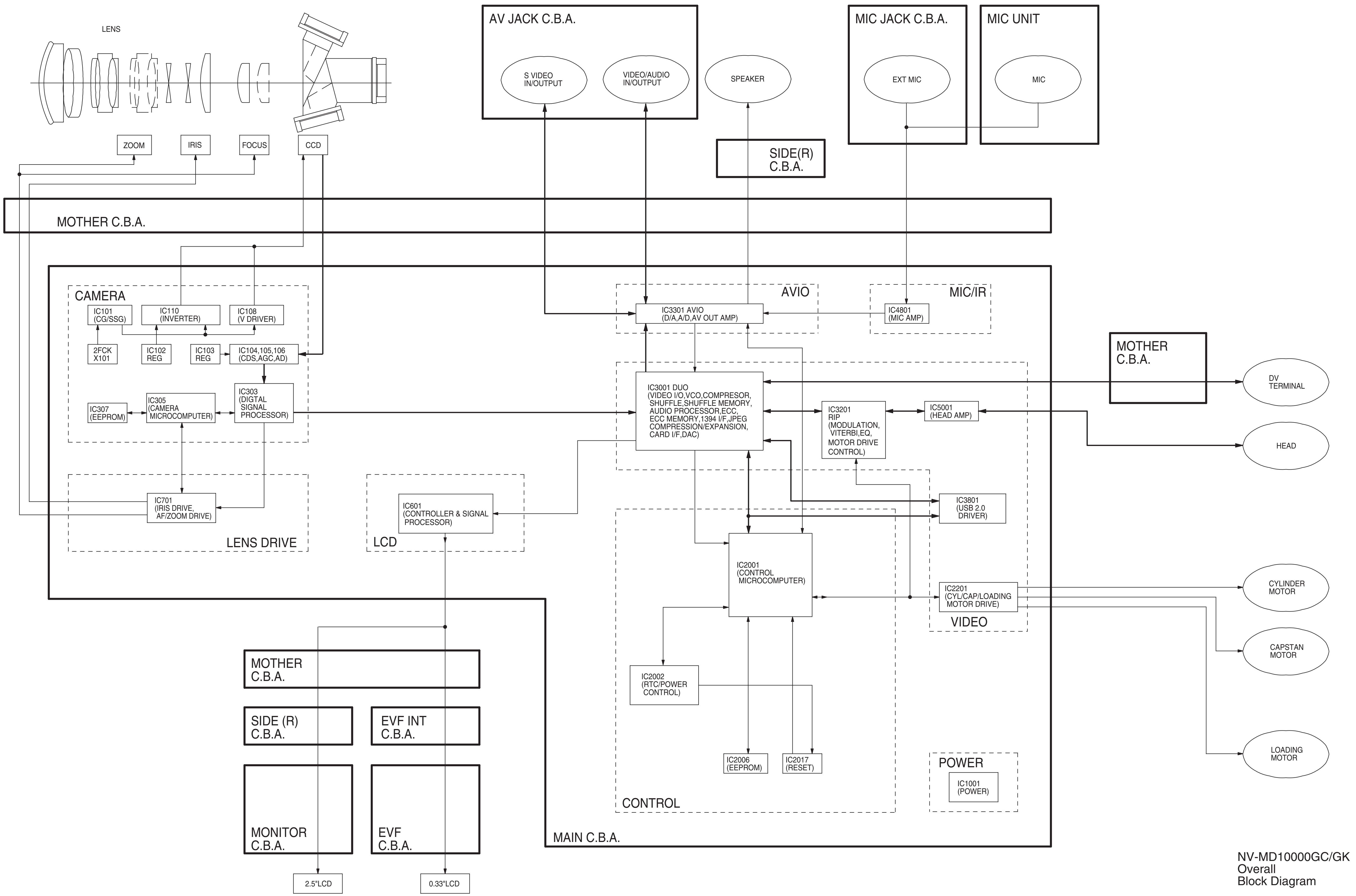
REF No.	PIN No.	REC	PB	EE
Q4901	E	0.4	0.4	0.4
Q4901	C	3.5	3.5	3.5
Q4901	B	0.9	0.9	0.9
Q4902	E	4.9	4.9	4.9
Q4902	C	2.3	2.3	2.3
Q4902	B	3.5	3.5	3.5
Q4903	E	0.4	0.4	0.4
Q4903	C	3.5	3.5	3.5
Q4903	B	0.9	0.9	0.9
Q4904	E	4.9	4.9	4.9
Q4904	C	2.2	2.2	2.2
Q4904	B	3.5	3.5	3.5
Q4905	E	4.9	4.9	4.9
Q4905	C	4.9	4.9	4.9
Q4905	B	4.2	4.2	4.2
Q4906	E	0	0	0
Q4906	C	0	0	0
Q4906	B	4.9	4.9	4.9

S2.4. Front P.C.B.

REF No.	PIN No.	REC	PB	EE
Q6801	E	3.7	3.7	3.7
Q6801	C	4.9	4.9	4.9
Q6801	B	3.4	3.4	3.4
Q6802	E	3.2	3.2	3.2
Q6802	C	4.9	4.9	4.9
Q6802	B	3.7	3.7	3.7

S3. Block Diagram

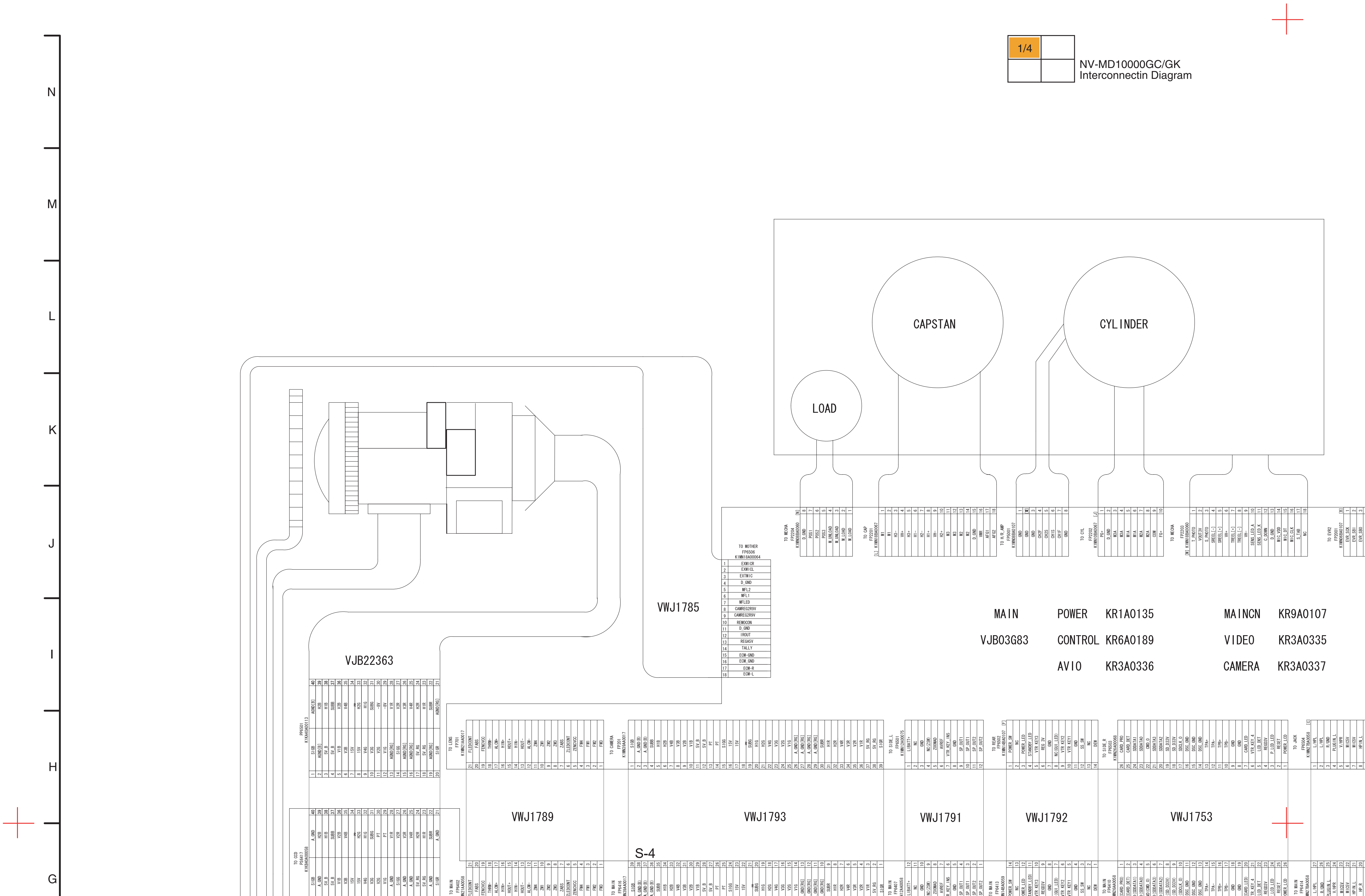
S3.1. Overall Block Diagram

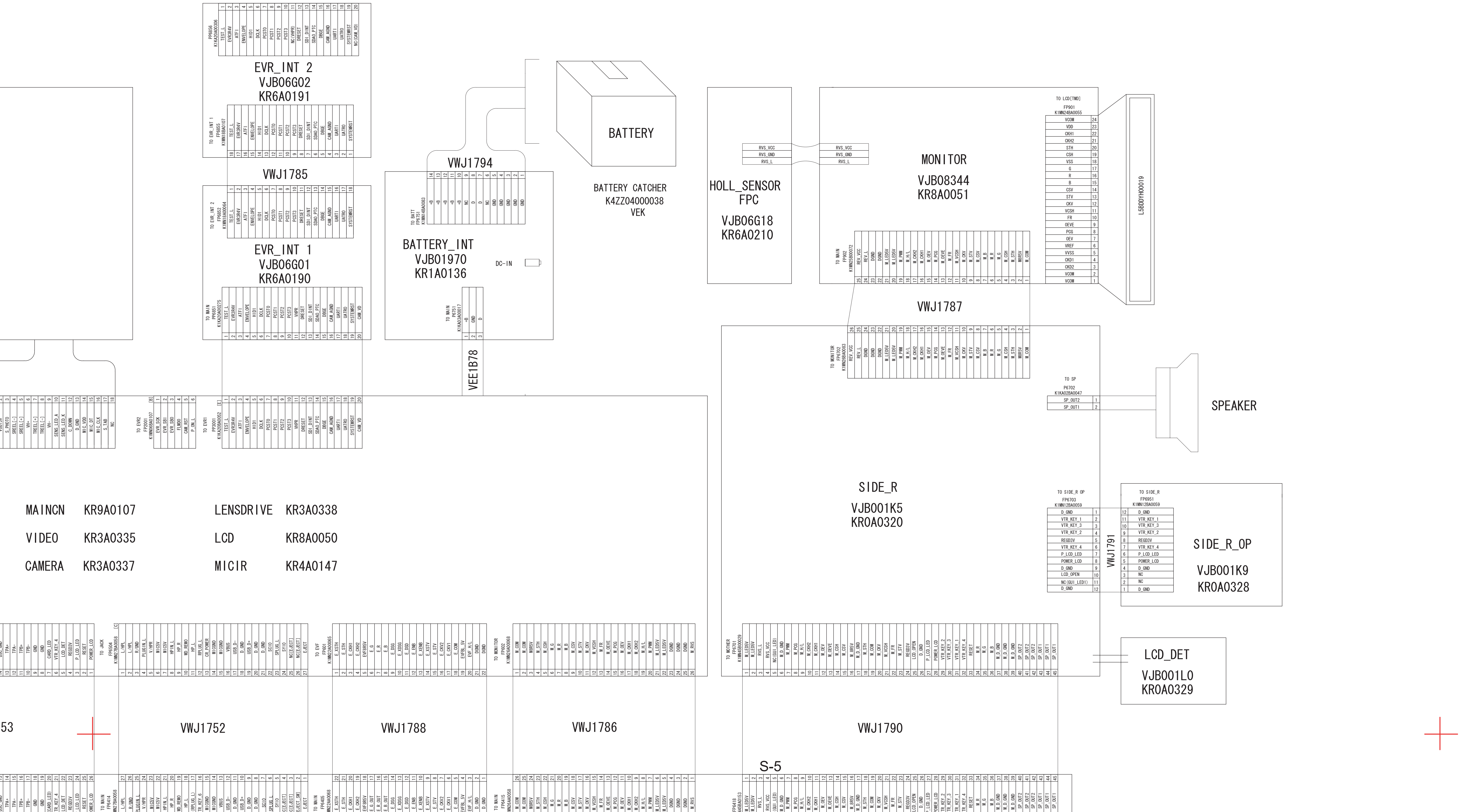


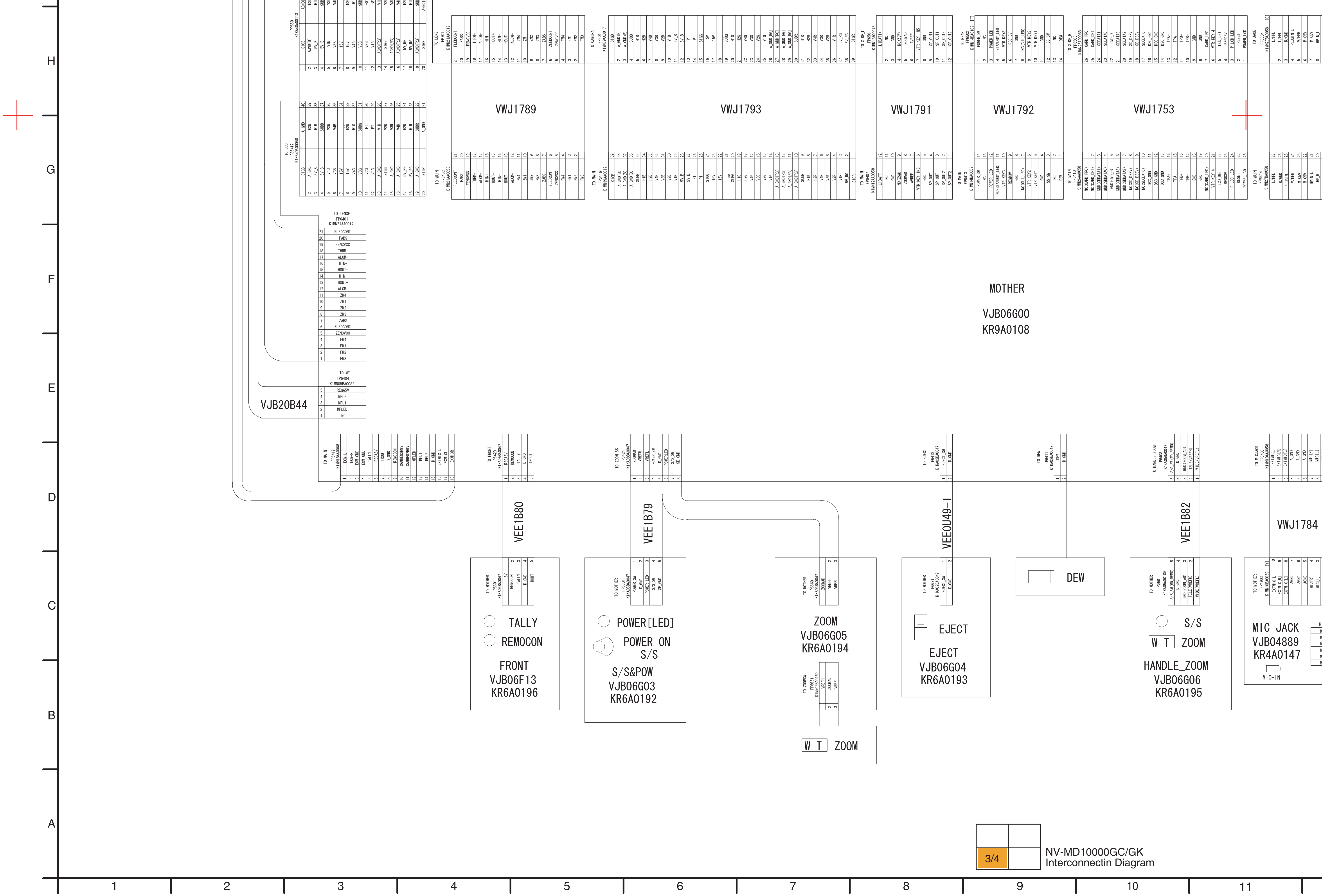
NV-MD10000GC/GK
Overall
Block Diagram

S4. Schematic Diagram

S4.1. Interconnection Diagram

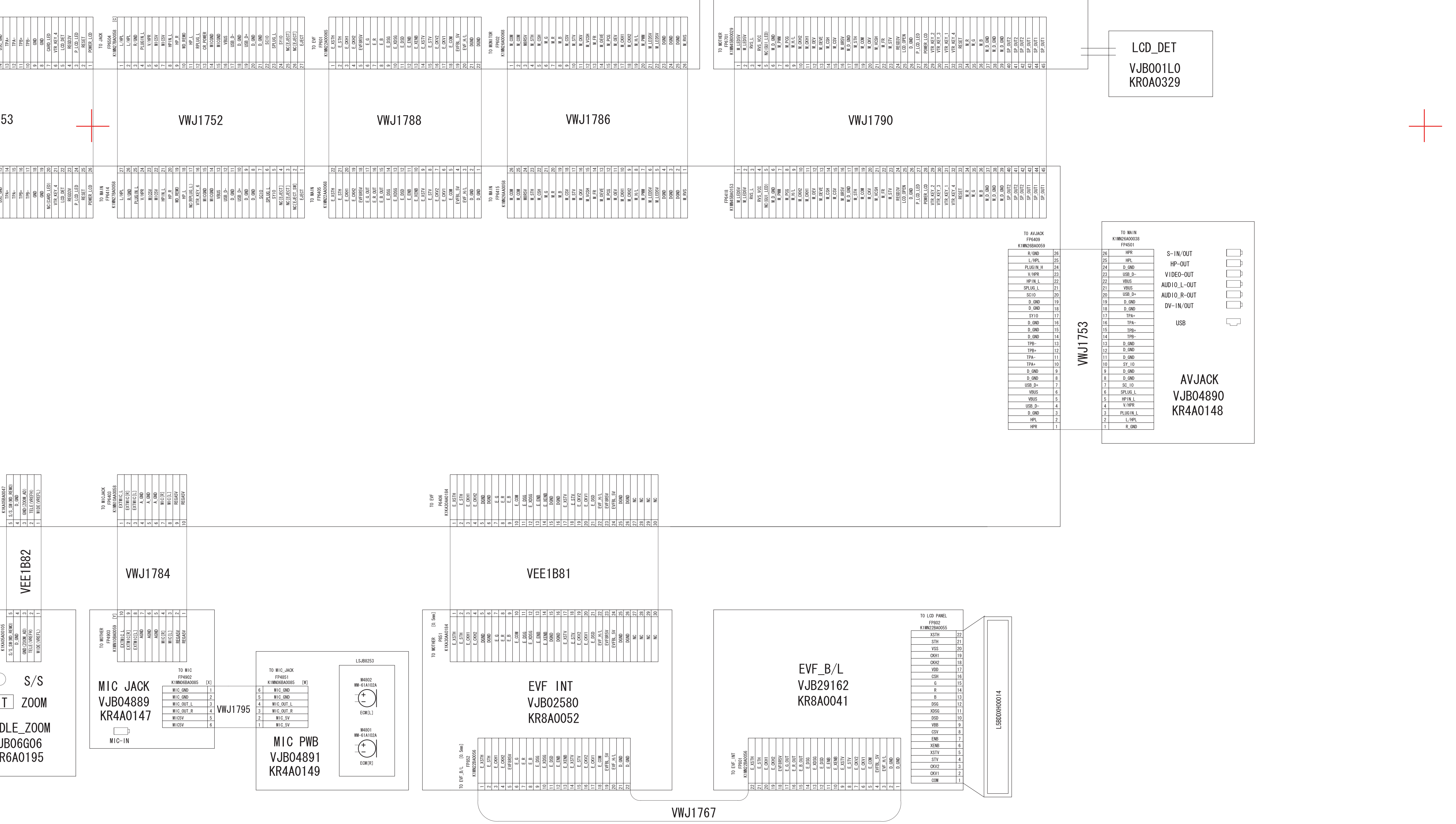



EVR_INT 2
VJB06G02
KR6A0191
VWJ1785
EVR_INT 1
VJB06G01
KR6A0190
VWJ1794
BATTERY_INT
VJB01970
KR1A0136
DC-IN
VEE1B78
BATTERY
BATTERY CATCHER
K4ZZ04000038
VEK
HOLL_SENSOR
FPC
VJB06G18
KR6A0210
MONITOR
VJB08344
KR8A0051
L5BDDYH00019
VWJ1787
SPEAKER
SIDE_R
VJB001K5
KR0A0320
VWJ1791
SIDE_R_OP
VJB001K9
KR0A0328
LCD_DET
VJB001L0
KR0A0329
MAINCN KR9A0107
VIDEO KR3A0335
CAMERA KR3A0337
LENSDRIVE KR3A0338
LCD KR8A0050
MICIR KR4A0147
VWJ1752
VWJ1788
VWJ1786
VWJ1790



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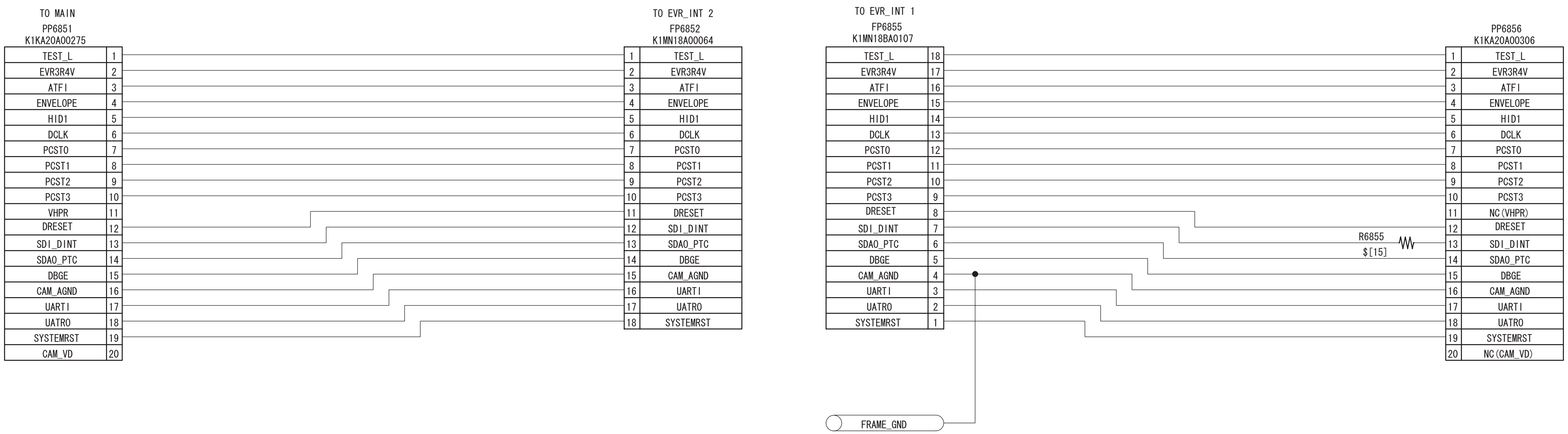
NV-MD10000GC/GK
Interconnectin Diagram



4/4 NV-MD10000GC/GK
Interconnectin Diagram

11 12 13 14 15 16 17 18 19 20 21

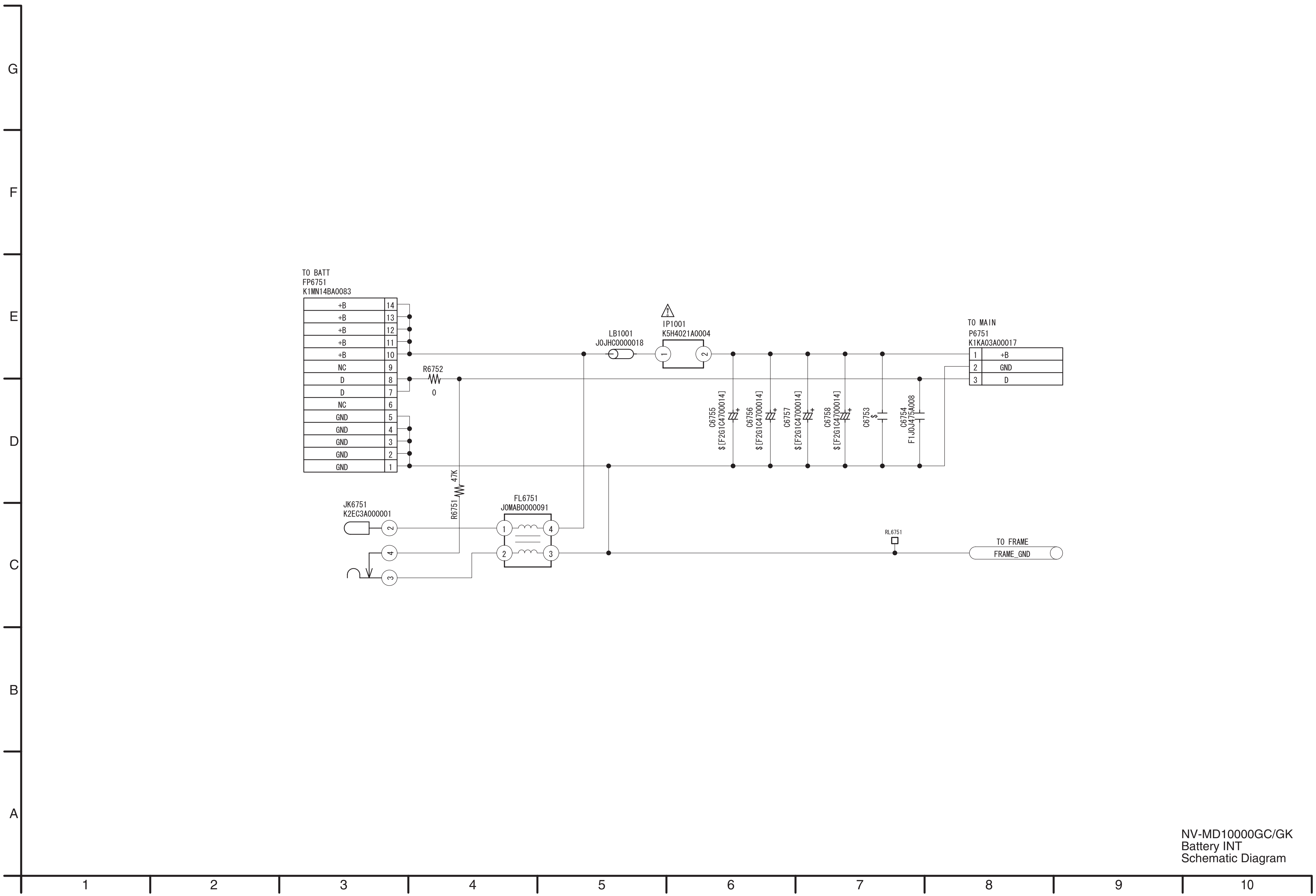
S4.2. EVR INT 1 Schematic Diagram / S4.3. EVR INT 2 Schematic Diagram



NV-MD10000GC/GK
EVR INT 1
Schematic Diagram

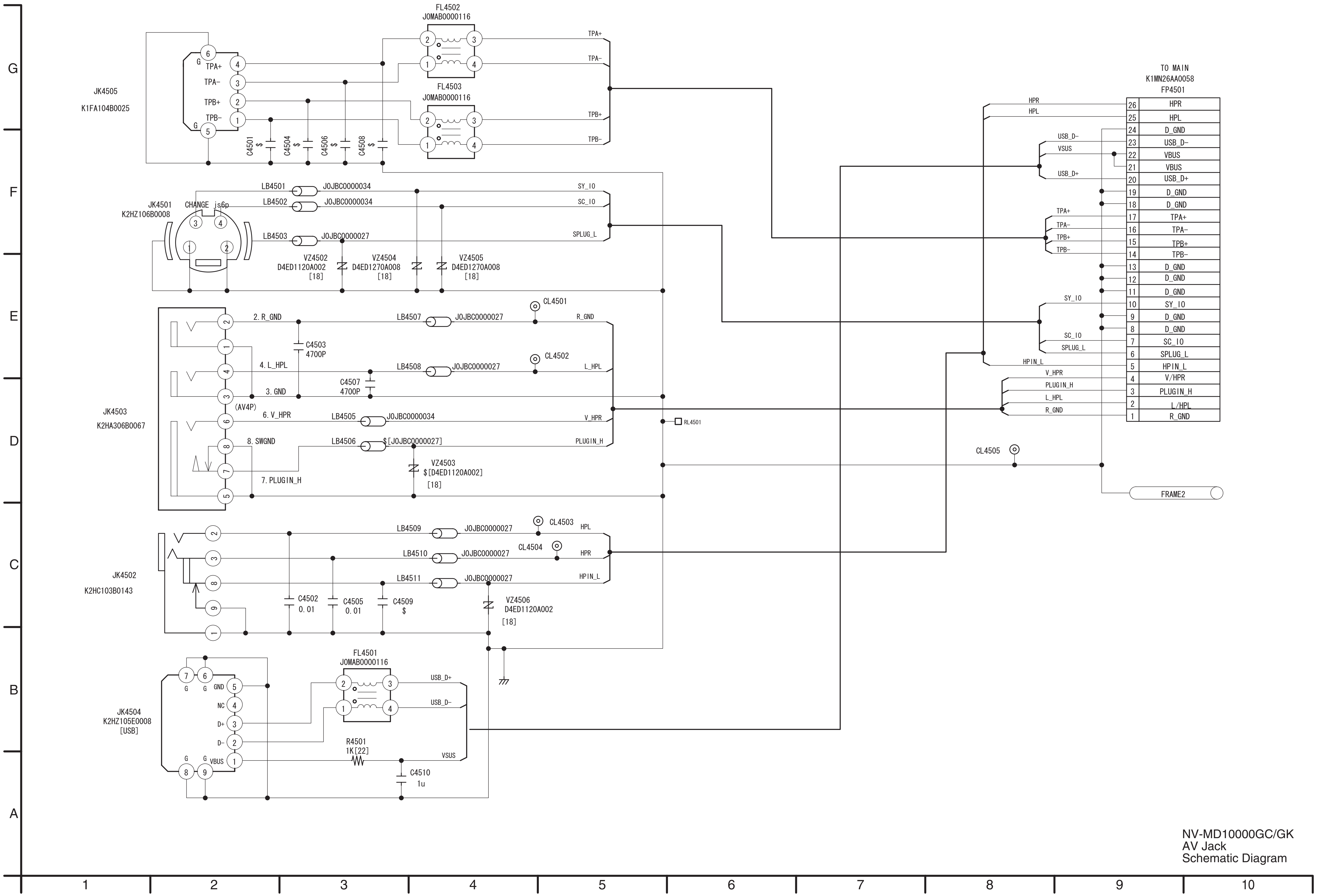
NV-MD10000GC/GK
EVR INT 2
Schematic Diagram

S4.4. Battery INT Schematic Diagram



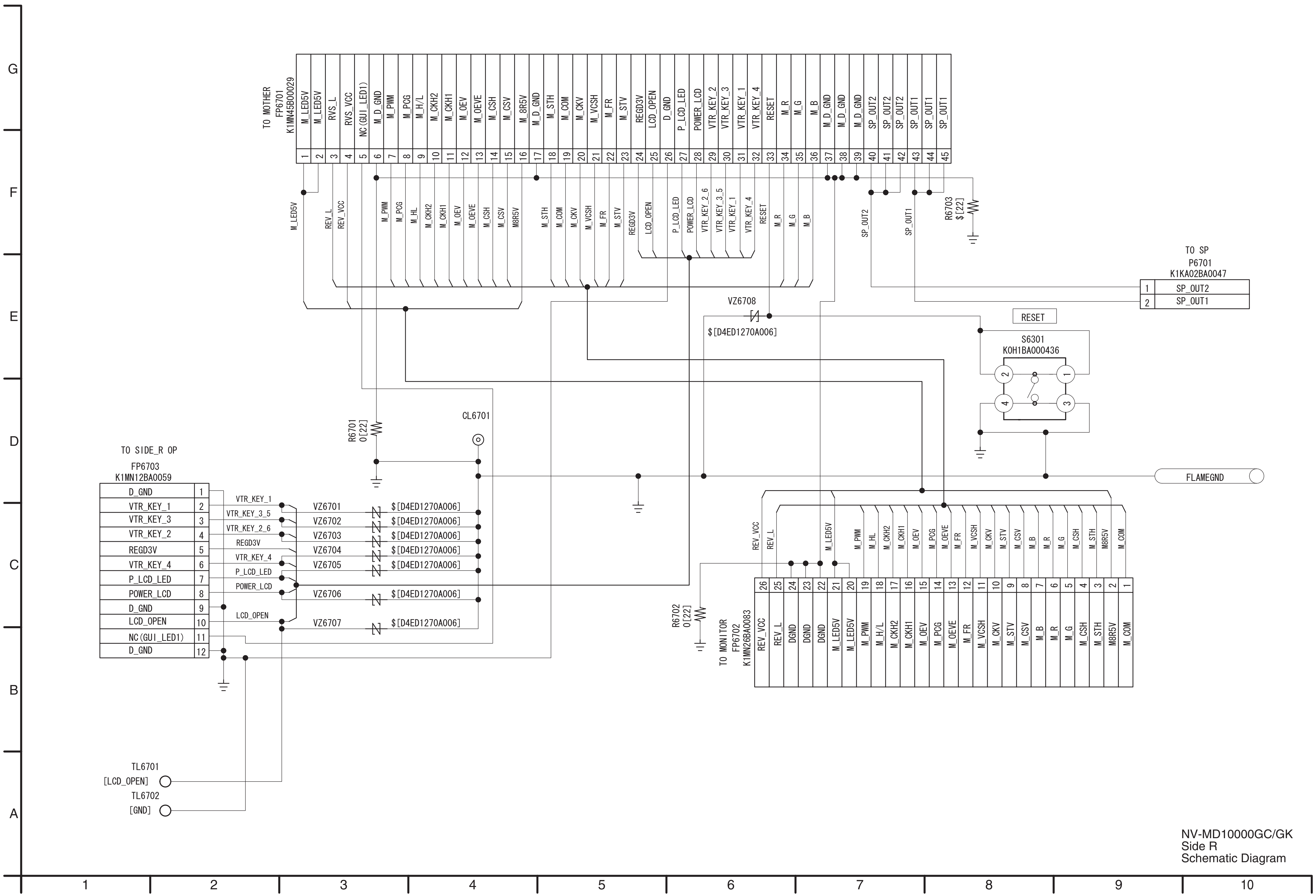
NV-MD10000GC/GK
Battery INT
Schematic Diagram

S4.5. AV Jack Schematic Diagram



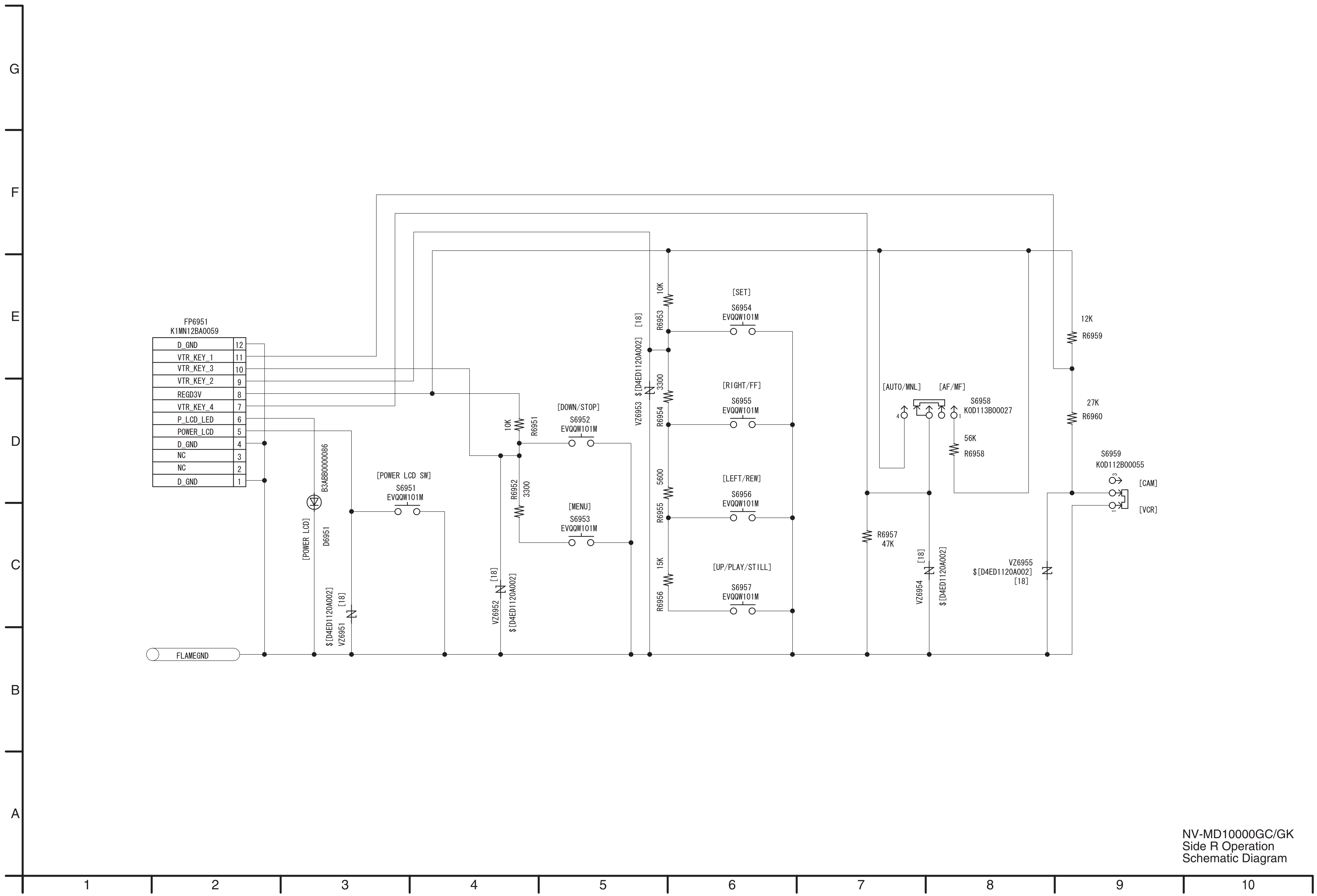
NV-MD10000GC/GK
AV Jack
Schematic Diagram

S4.6. Side R Schematic Diagram



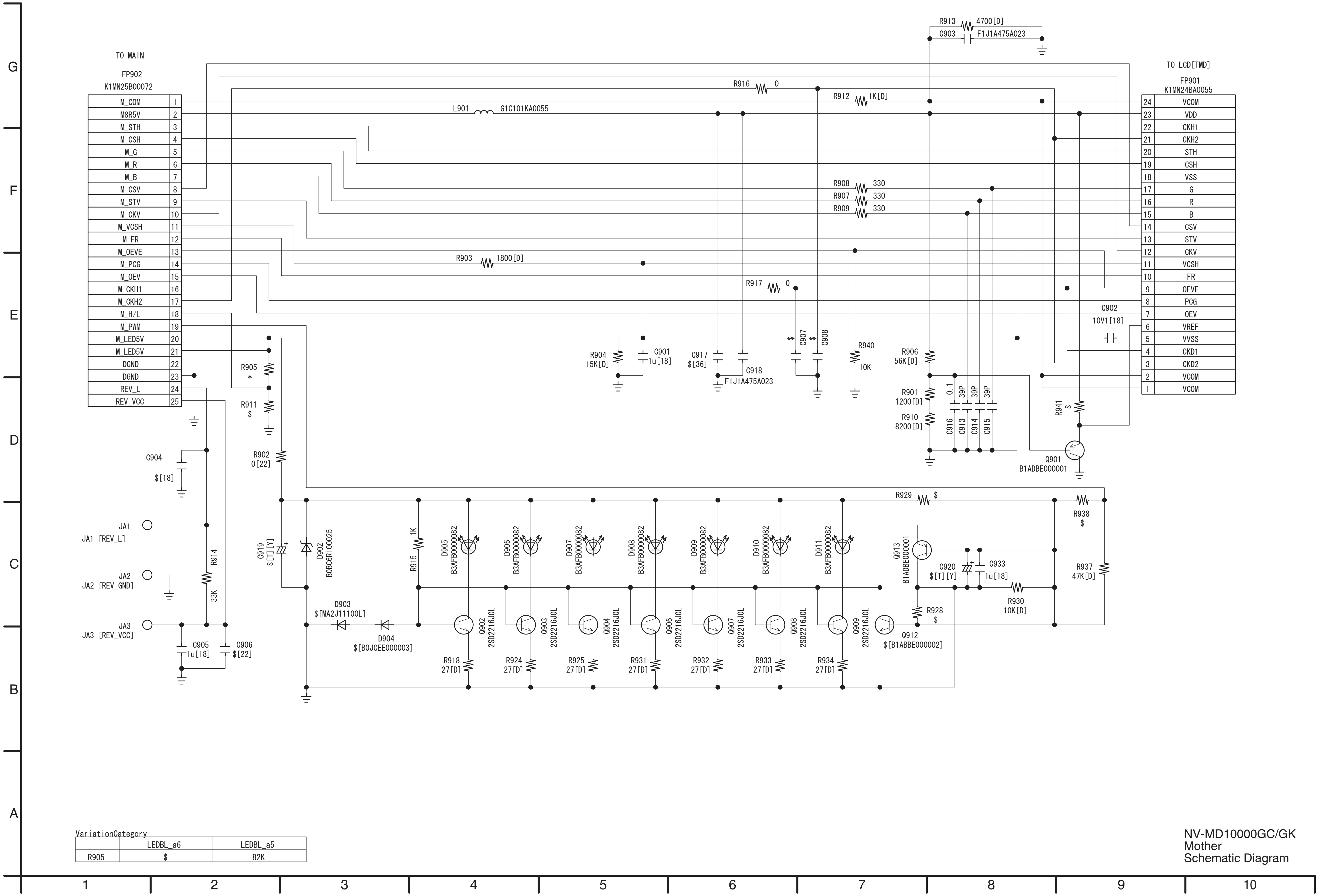
NV-MD10000GC/GK
Side R
Schematic Diagram

S4.7. Side R Operation Schematic Diagram



NV-MD10000GC/GK
Side R Operation
Schematic Diagram

S4.8. Monitor Schematic Diagram

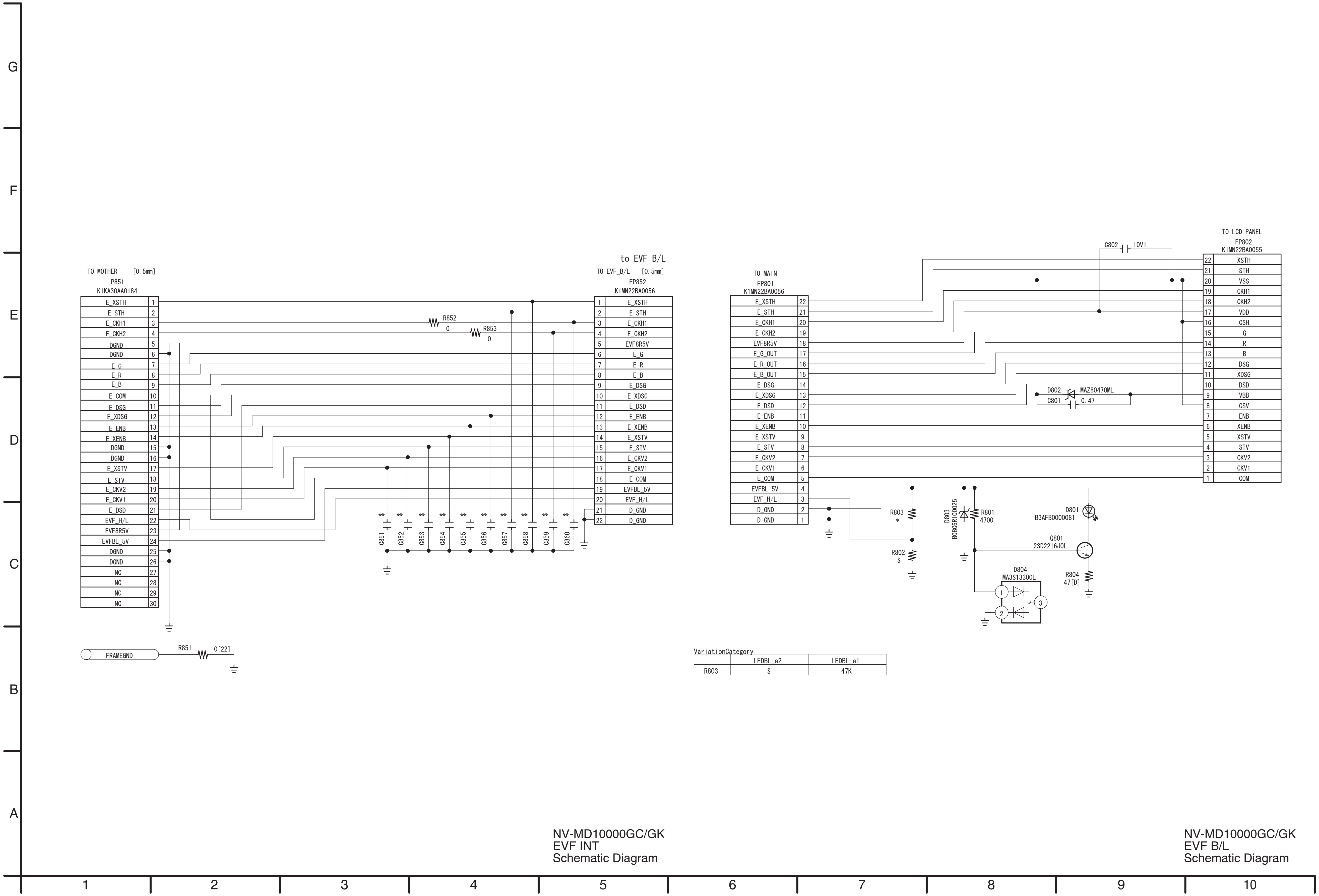


VariationCategory

	LEDBL_a6	LEDBL_a5
R905	$	82K

NV-MD10000GC/GK
Mother
Schematic Diagram

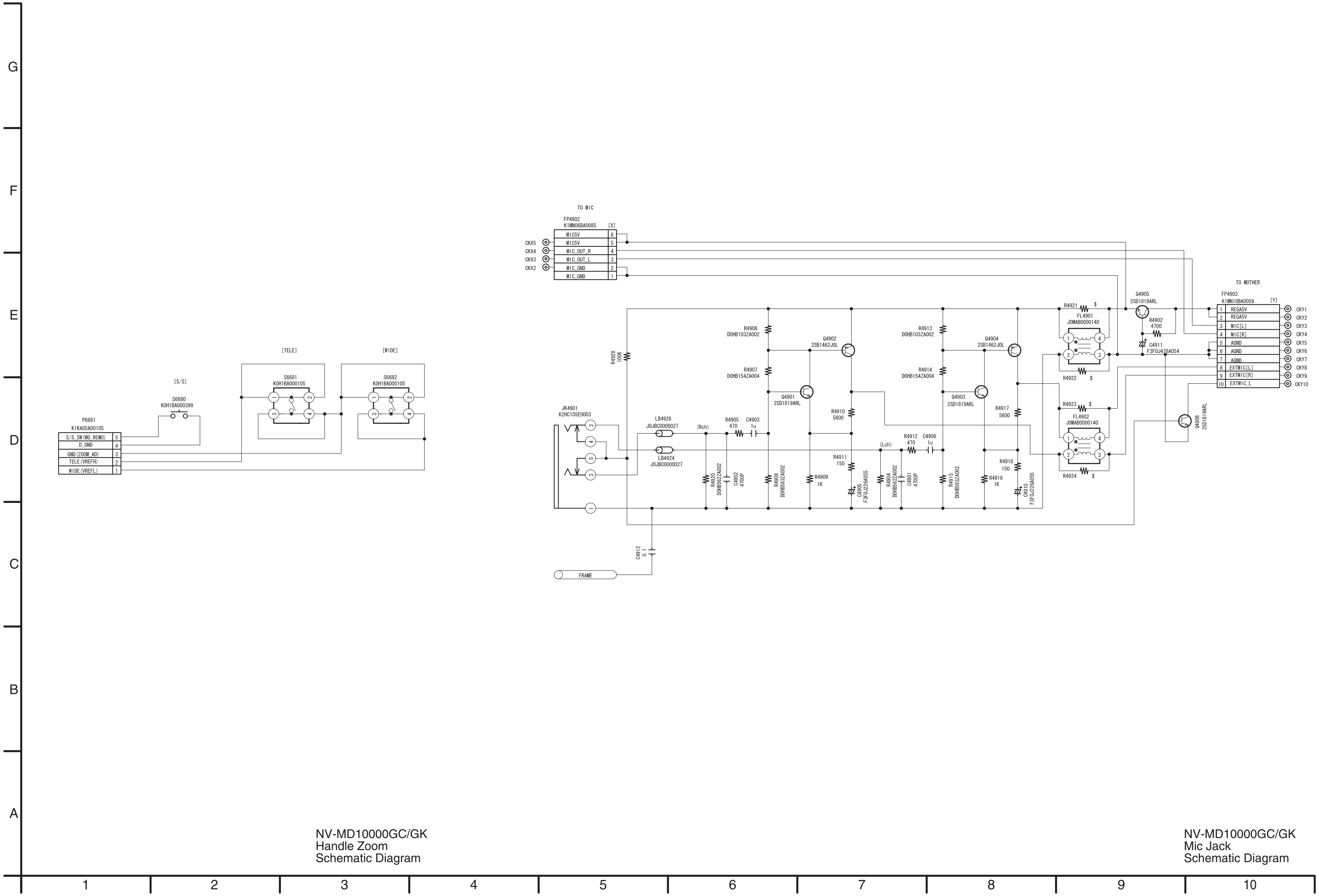
S4.9. EVF INT Schematic Diagram / S4.10. EVF B/L Schematic Diagram



VariationCategory

	LEDBL_a2	LEDBL_a1
R803	$	47K

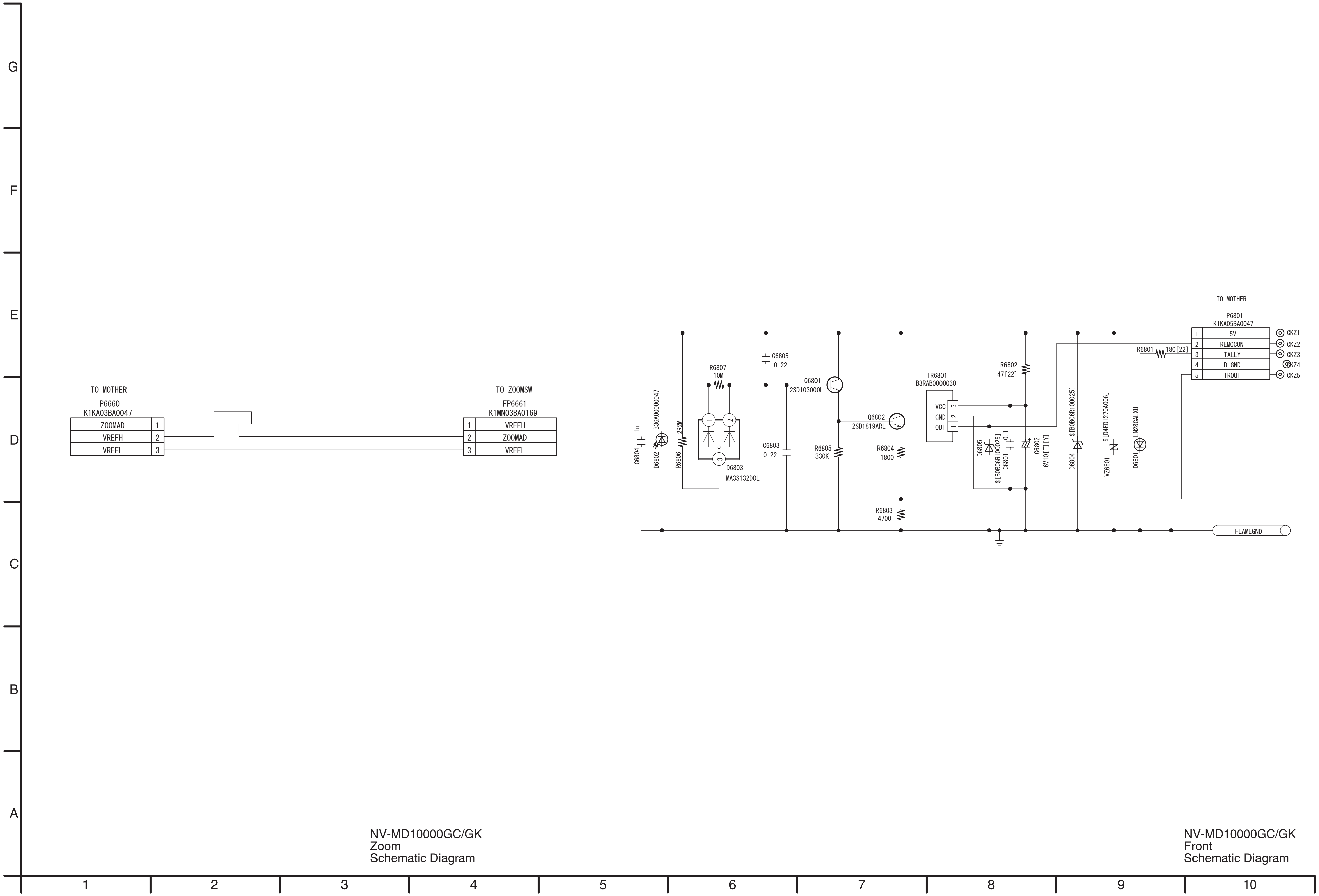
S4.11. Handle Zoom Schematic Diagram / S4.12. Mic Jack Schematic Diagram



NV-MD10000GC/GK
Handle Zoom
Schematic Diagram

NV-MD10000GC/GK
Mic Jack
Schematic Diagram

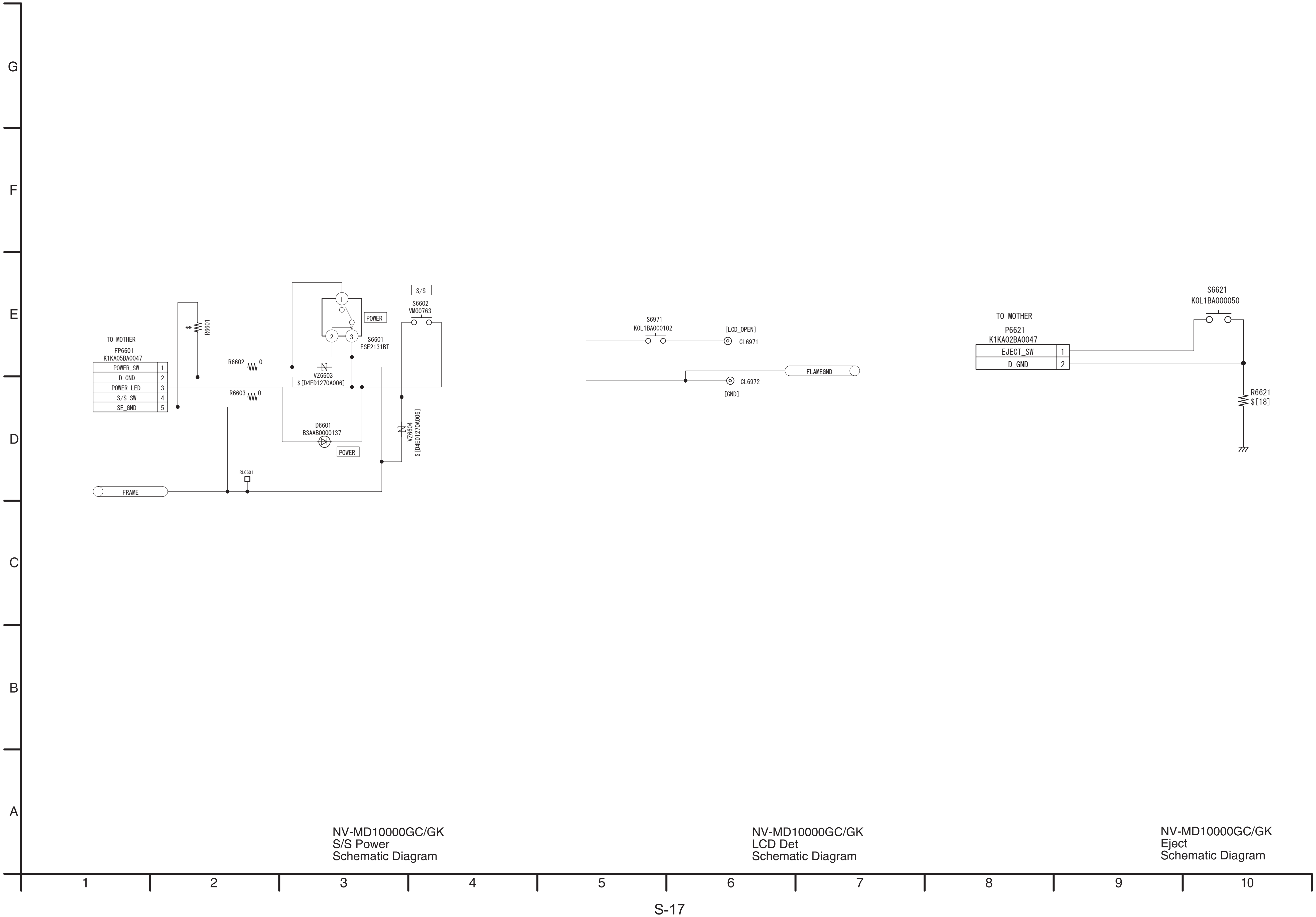
S4.13. Zoom Schematic Diagram / S4.14. Front Schematic Diagram



NV-MD10000GC/GK
Zoom
Schematic Diagram

NV-MD10000GC/GK
Front
Schematic Diagram

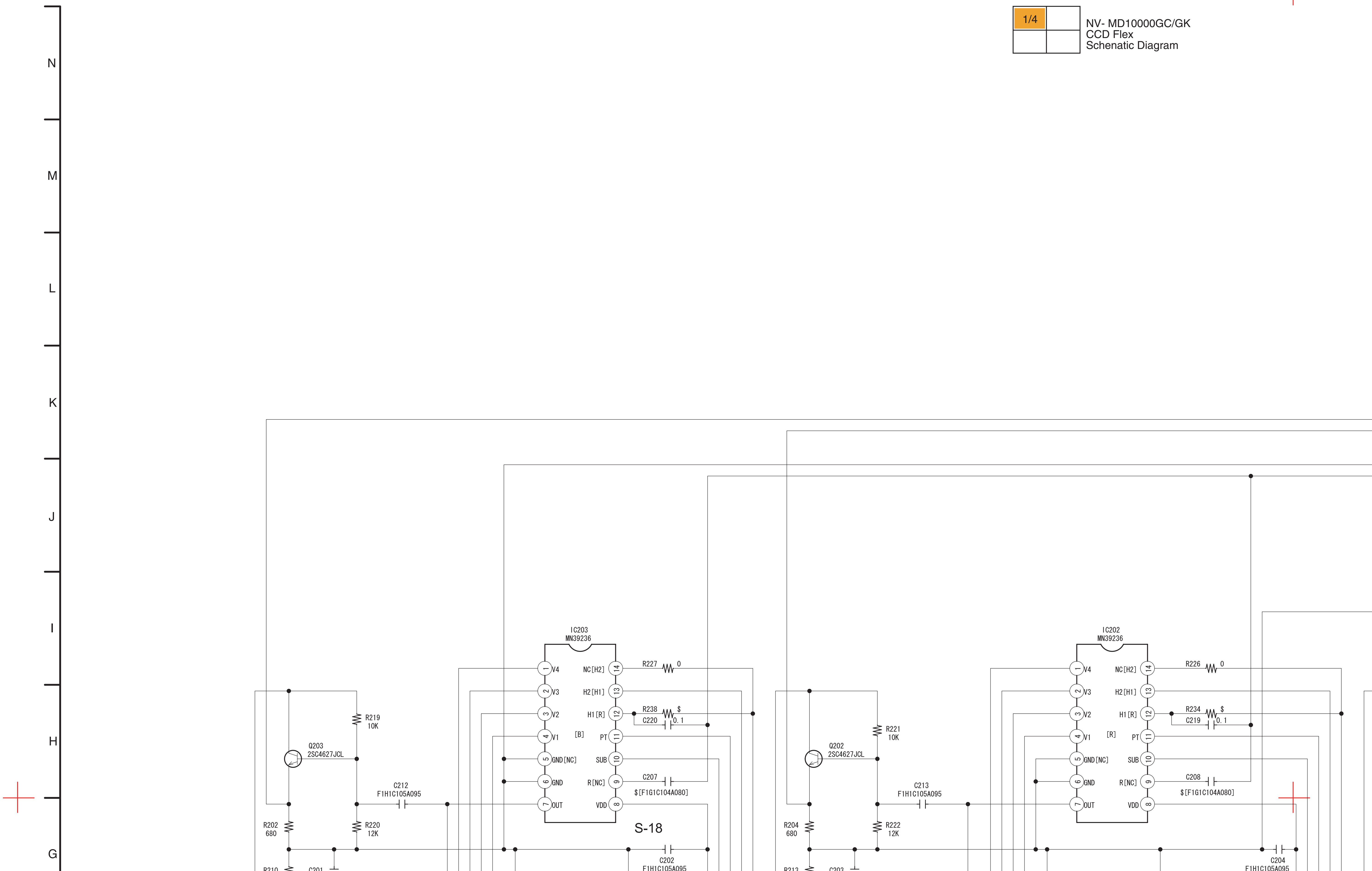
S4.15. S/S Power Schematic Diagram / S4.16. LCD Det Schematic Diagram / S4.17. Eject Schematic Diagram



S4.18. CCD Flex Schematic Diagram

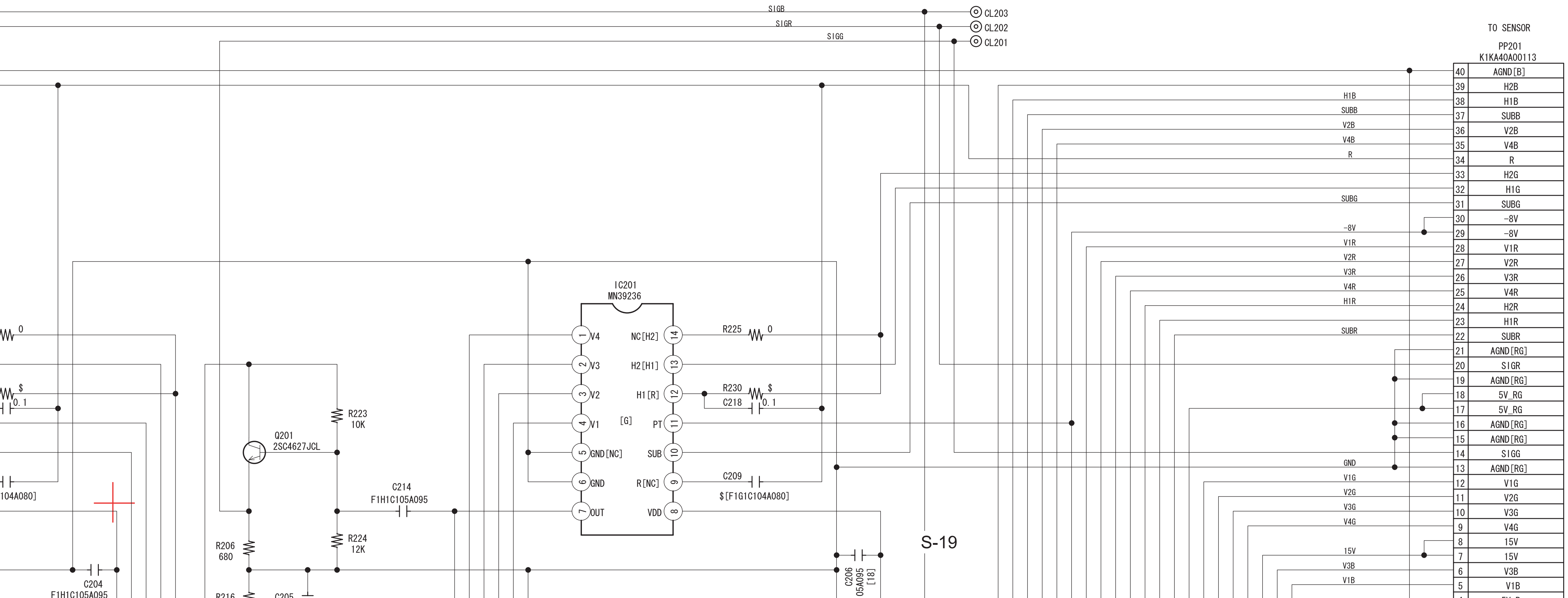
1/4

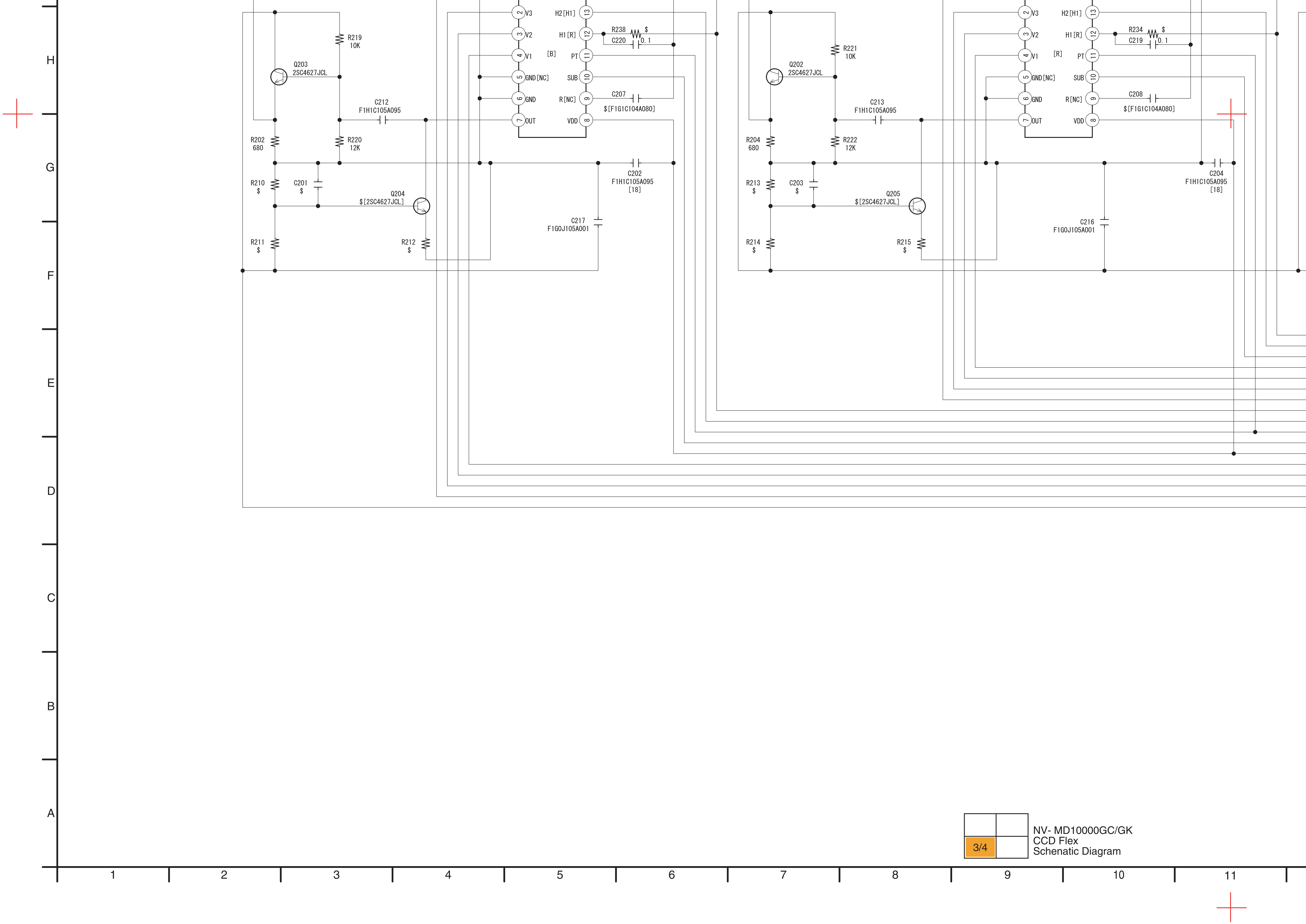
NV- MD10000GC/GK
CCD Flex
Schenatic Diagram



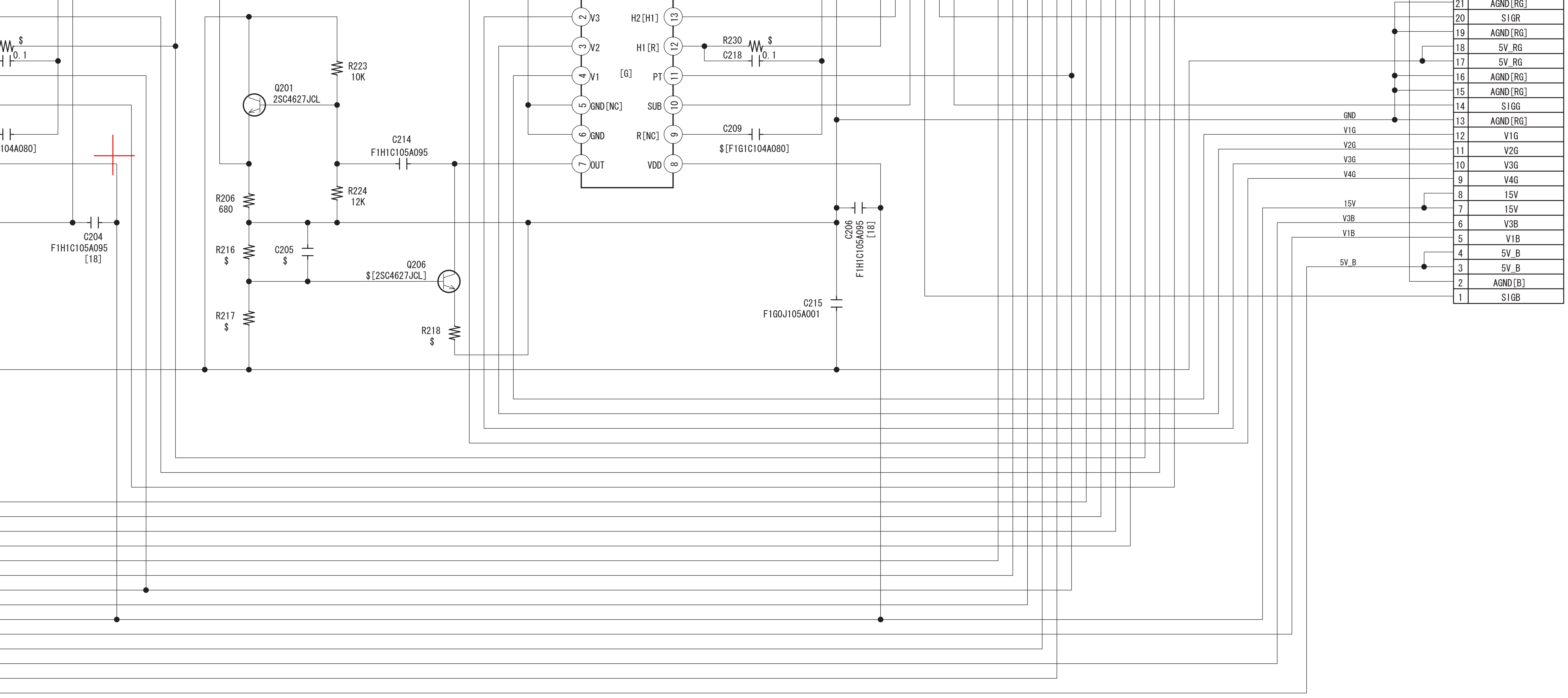
	2/4

NV- MD10000GC/GK
CCD Flex
Schenatic Diagram





NV- MD10000GC/GK
CCD Flex
Schenatic Diagram

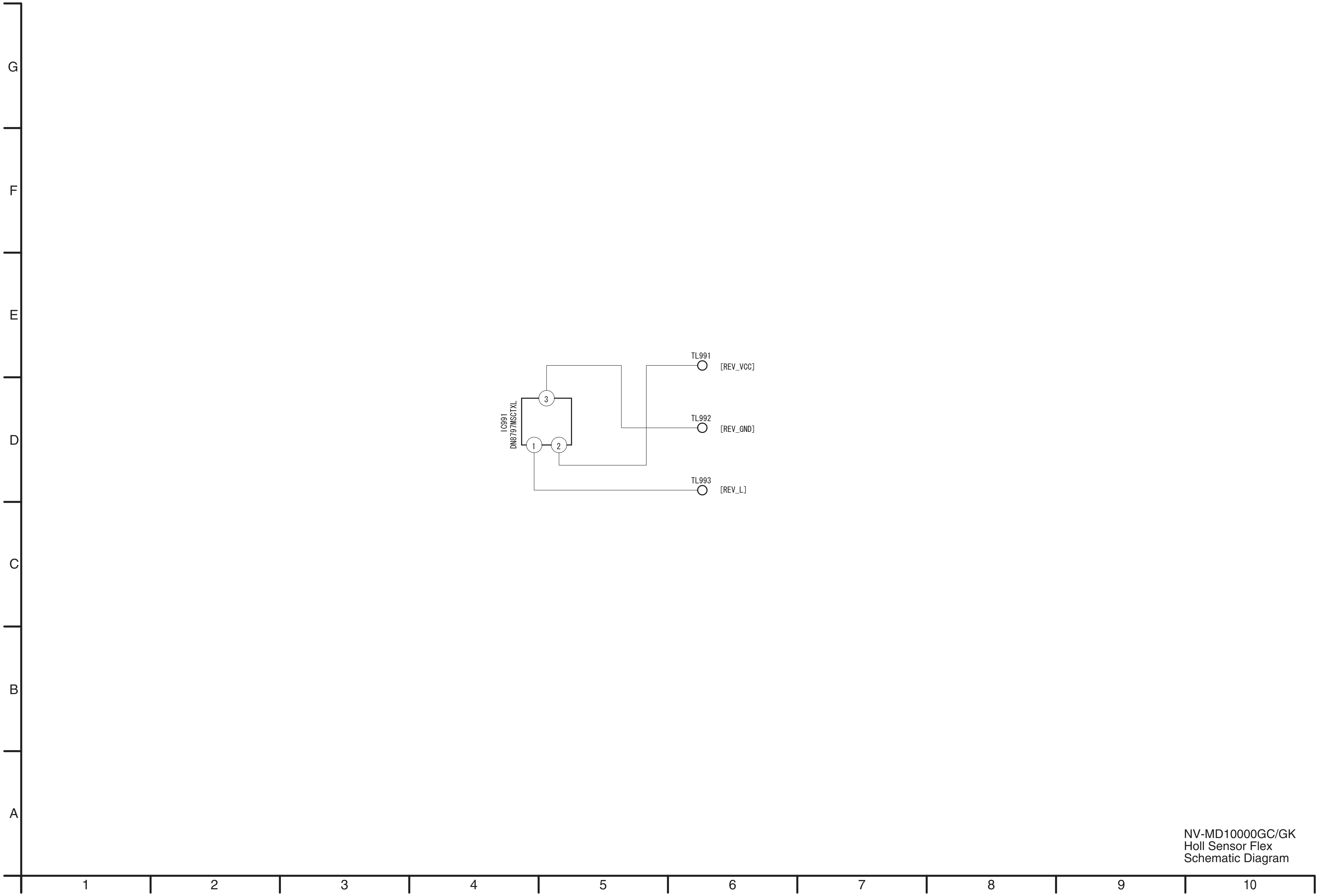


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NV- MD10000GC/GK
CCD Flex
Schenatic Diagram

11	12	13	14	15	16	17	18	19	20	21

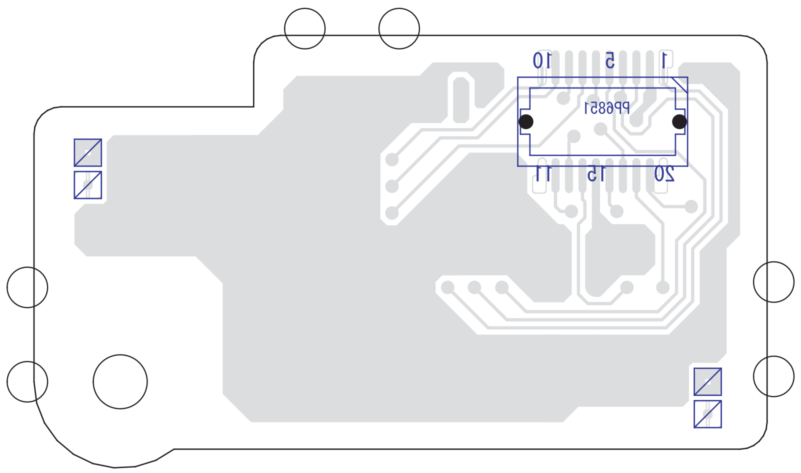
S4.19. Holl Sensor Flex Schematic Diagram



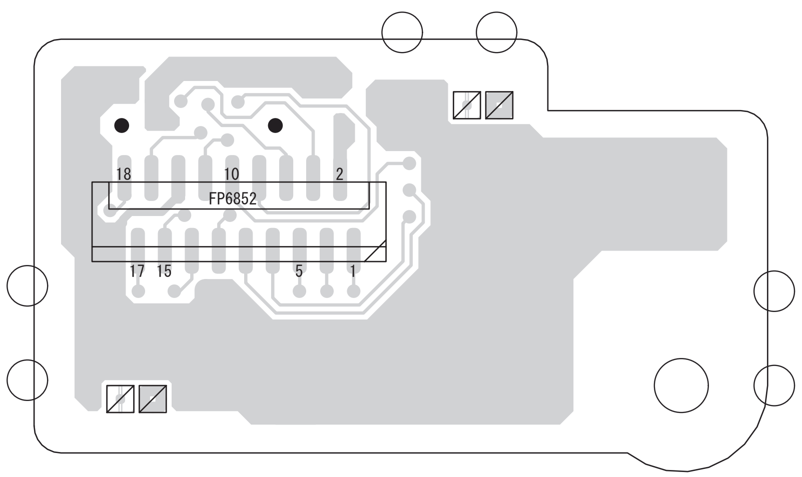
NV-MD10000GC/GK
Holl Sensor Flex
Schematic Diagram

S5. Print Circuit Board

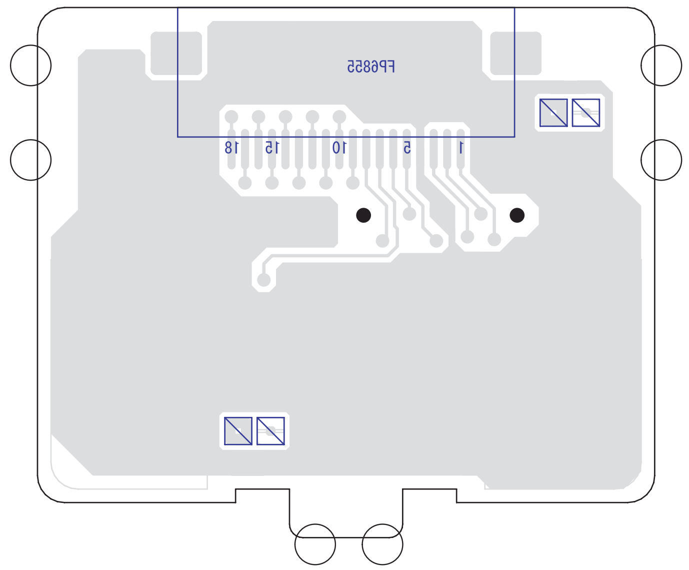
S5.1. EVR INT 1 P.C.B. / S5.2. EVR INT2 P.C.B.



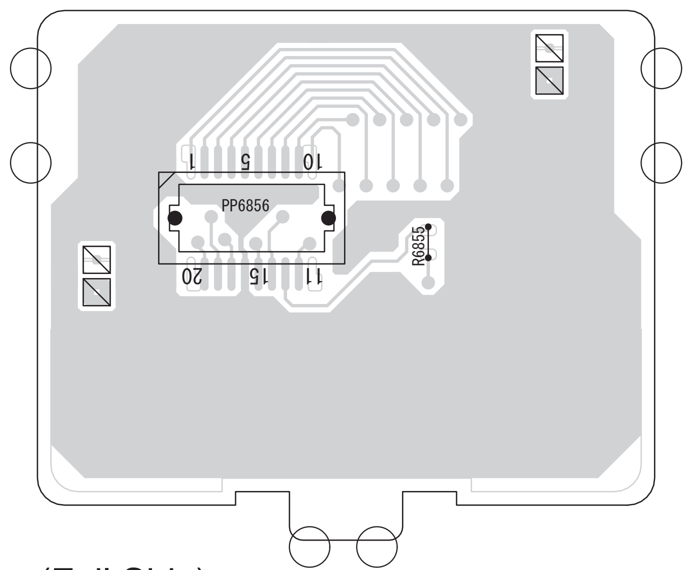
(Component Side)



(Foil Side)



(Component Side)

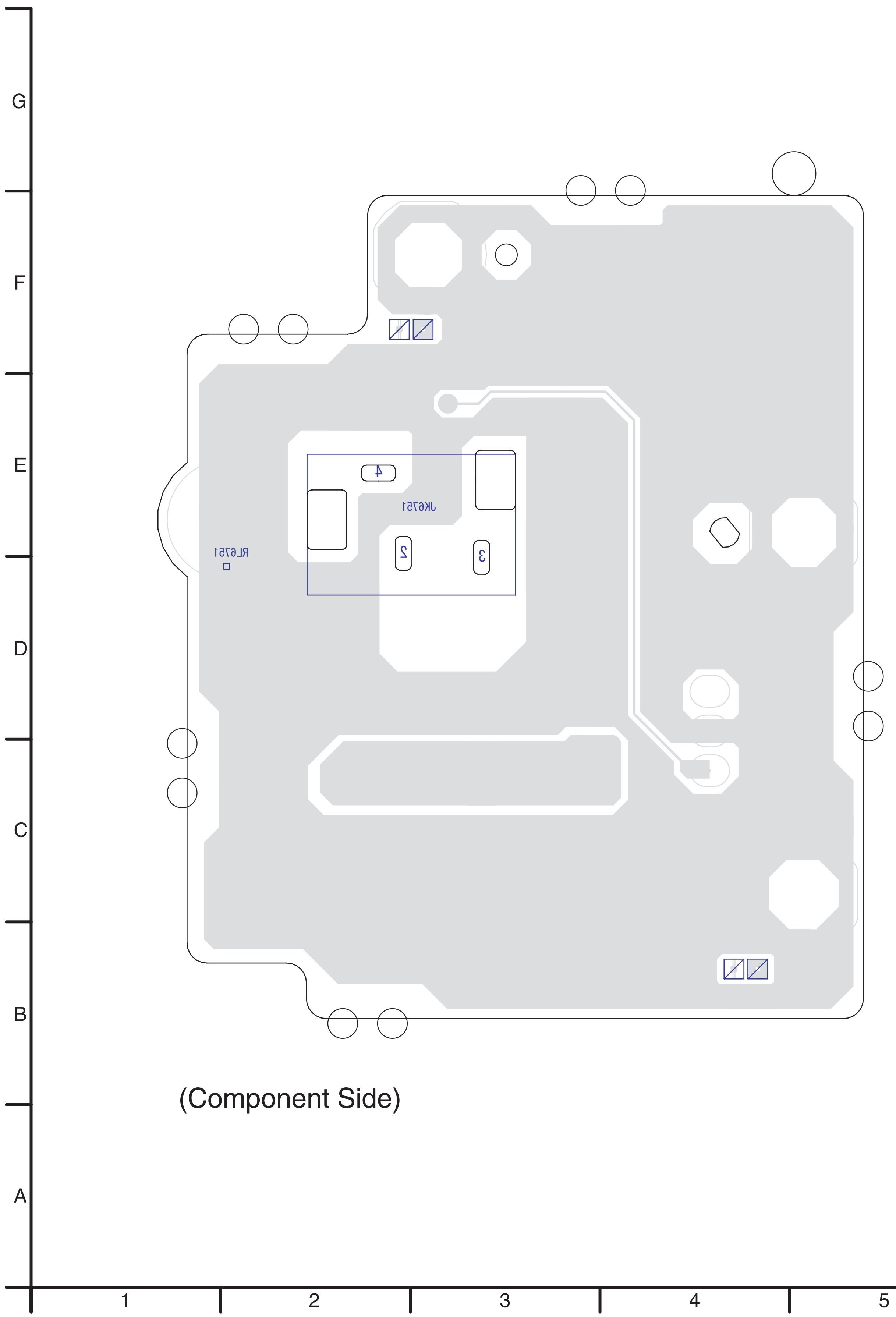


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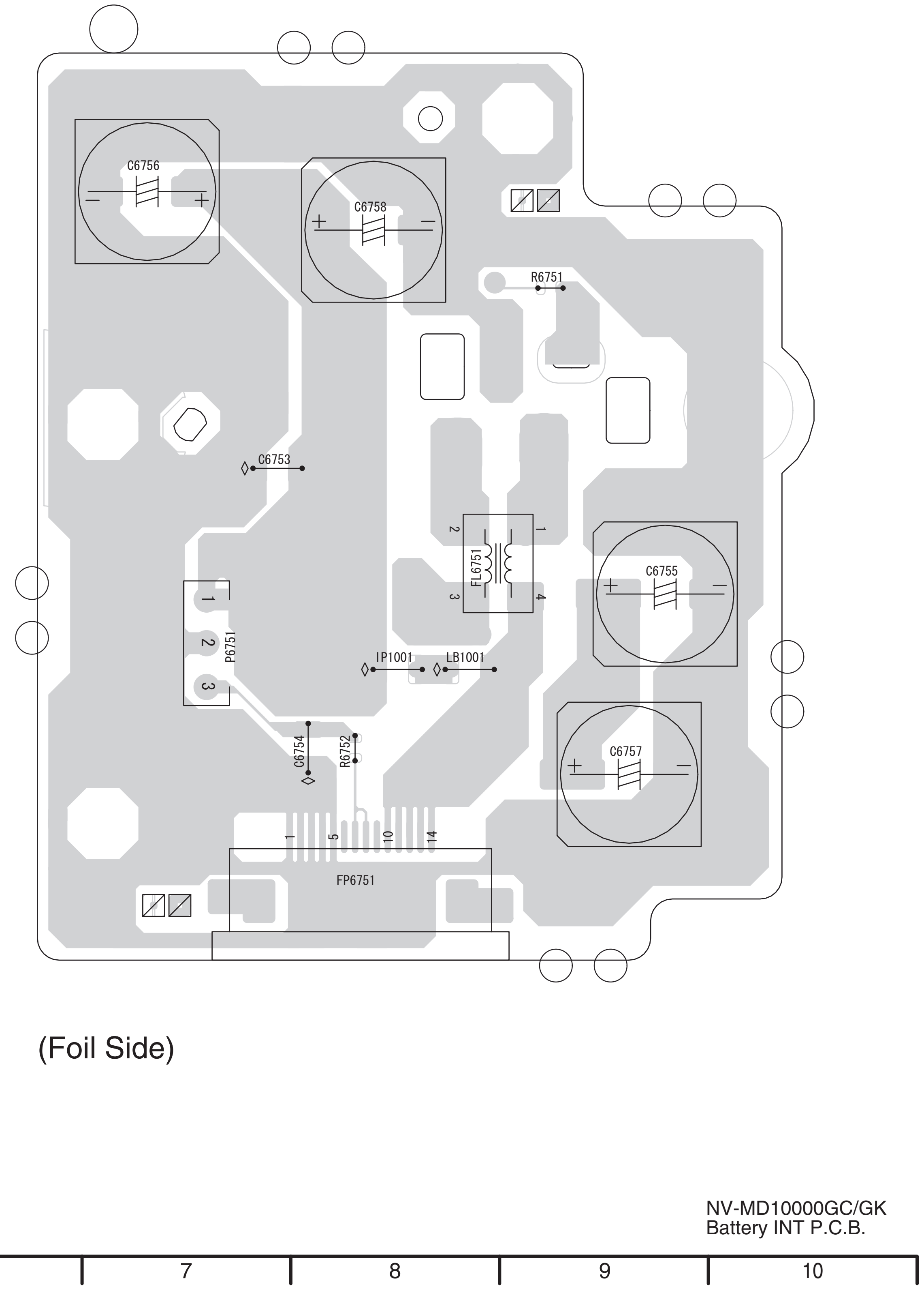
NV-MD10000GC/GK
EVR INT 1 P.C.B.

NV-MD10000GC/GK
EVR INT 2 P.C.B.

S5.3 Battery INT P.C.B.

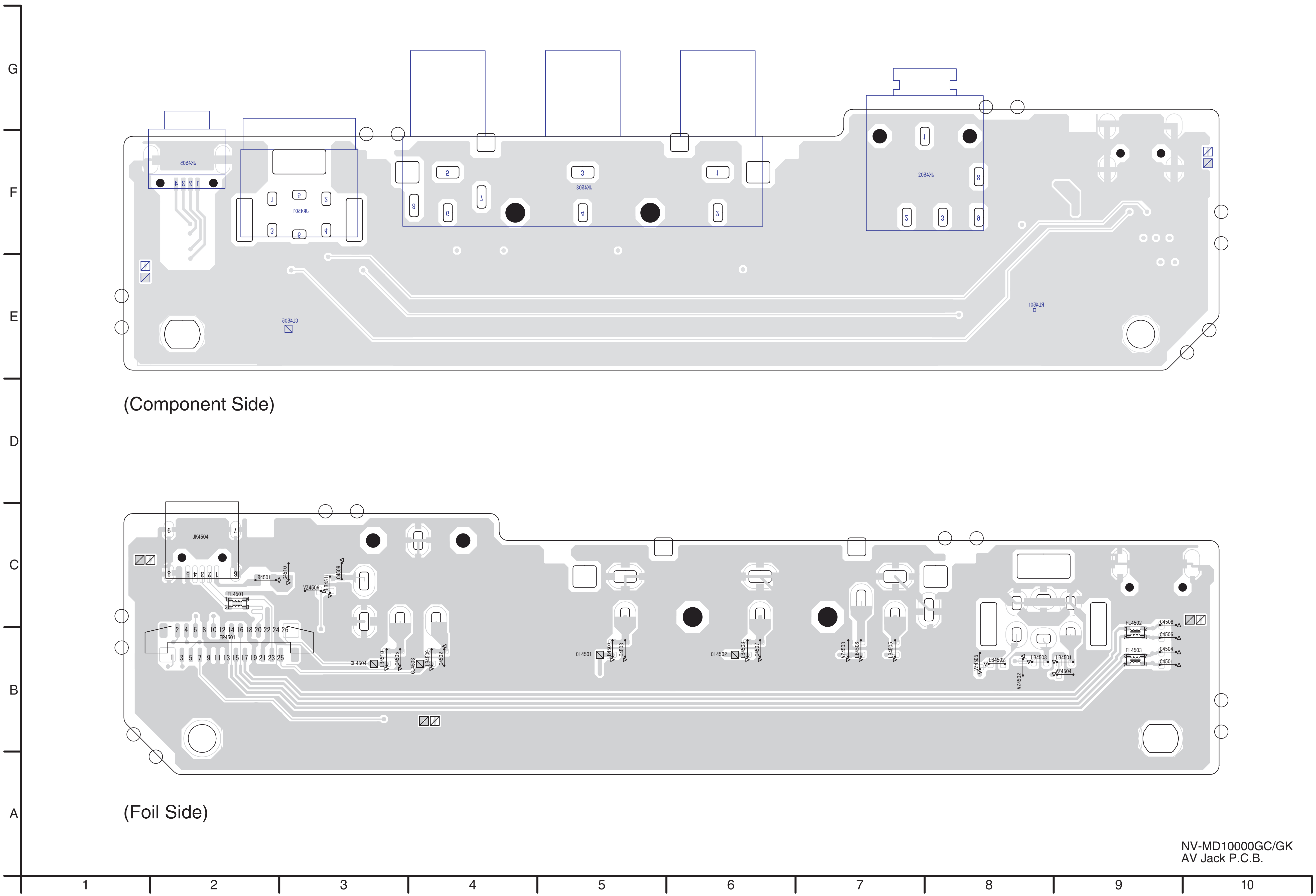


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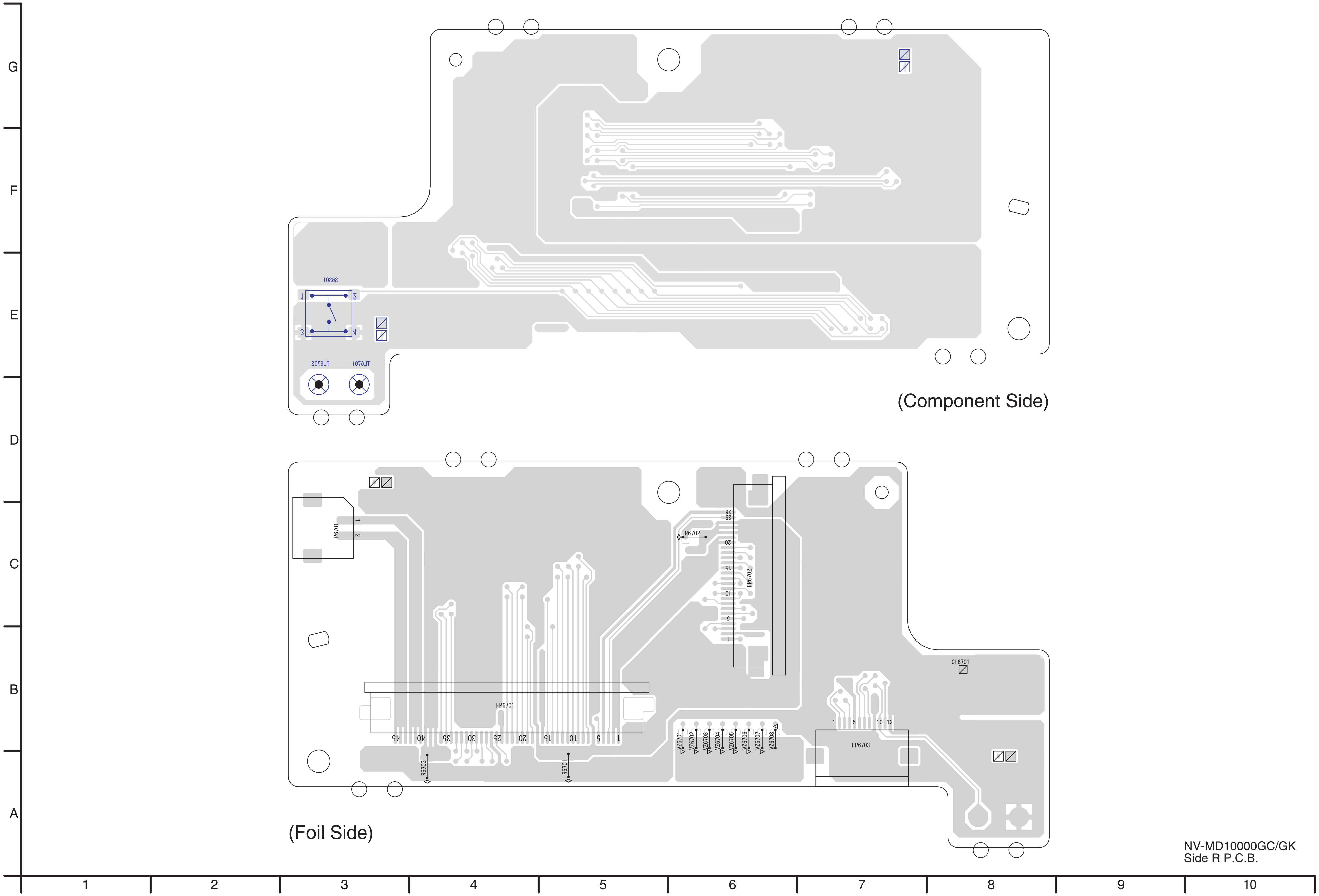
(Foil Side)

S5.4. AV Jack P.C.B.



NV-MD10000GC/GK
AV Jack P.C.B.

S5.5 Side R P.C.B.

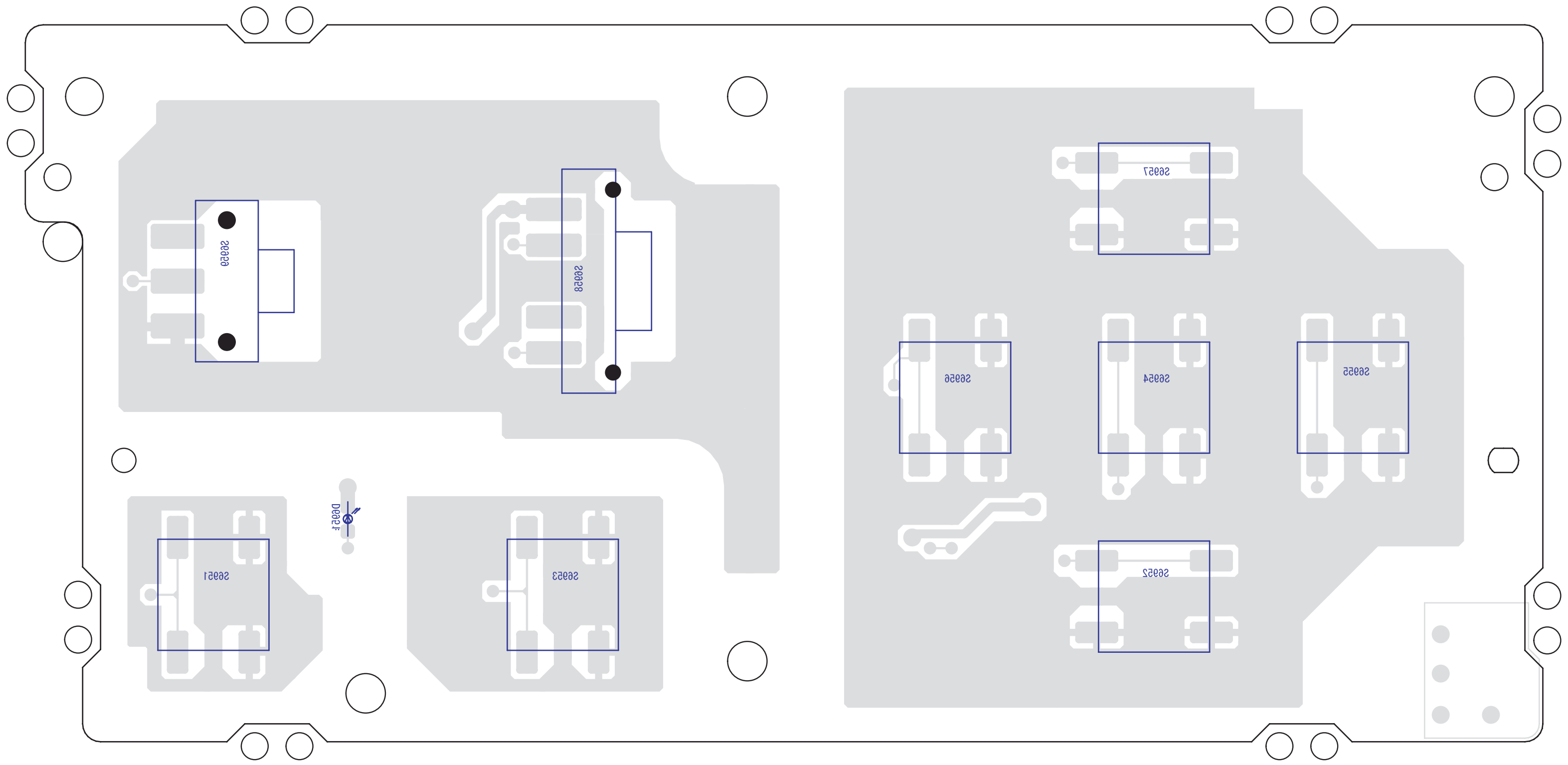


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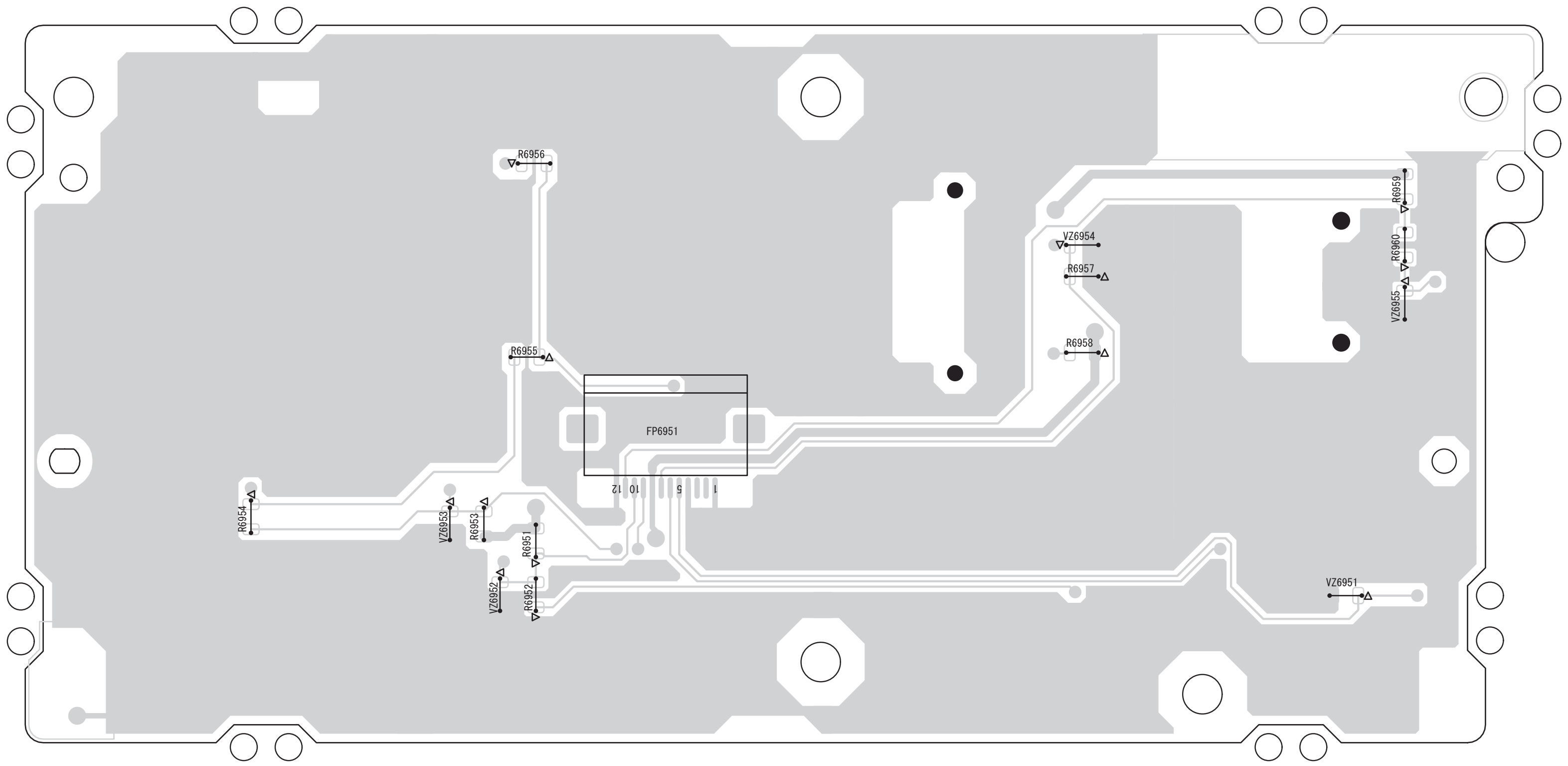
(Foil Side)

NV-MD10000GC/GK
Side R P.C.B.

S5.6 Side R Operation P.C.B.



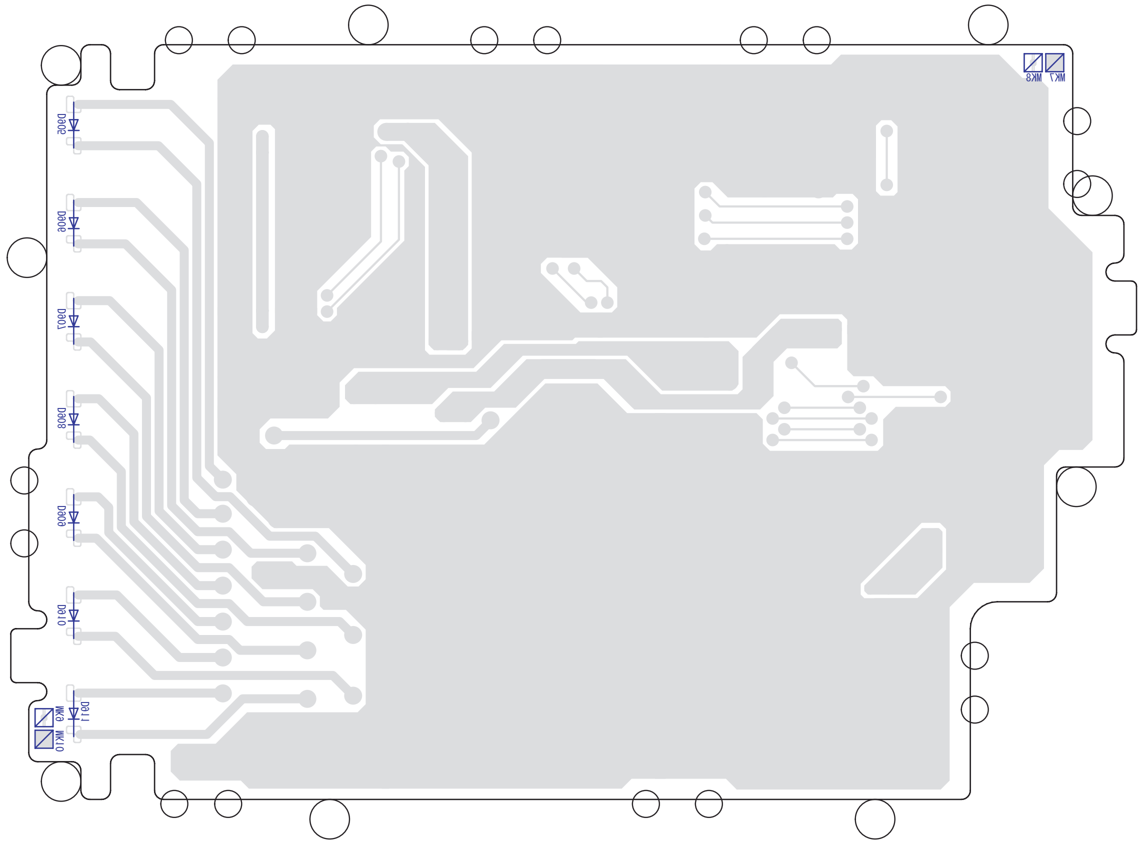
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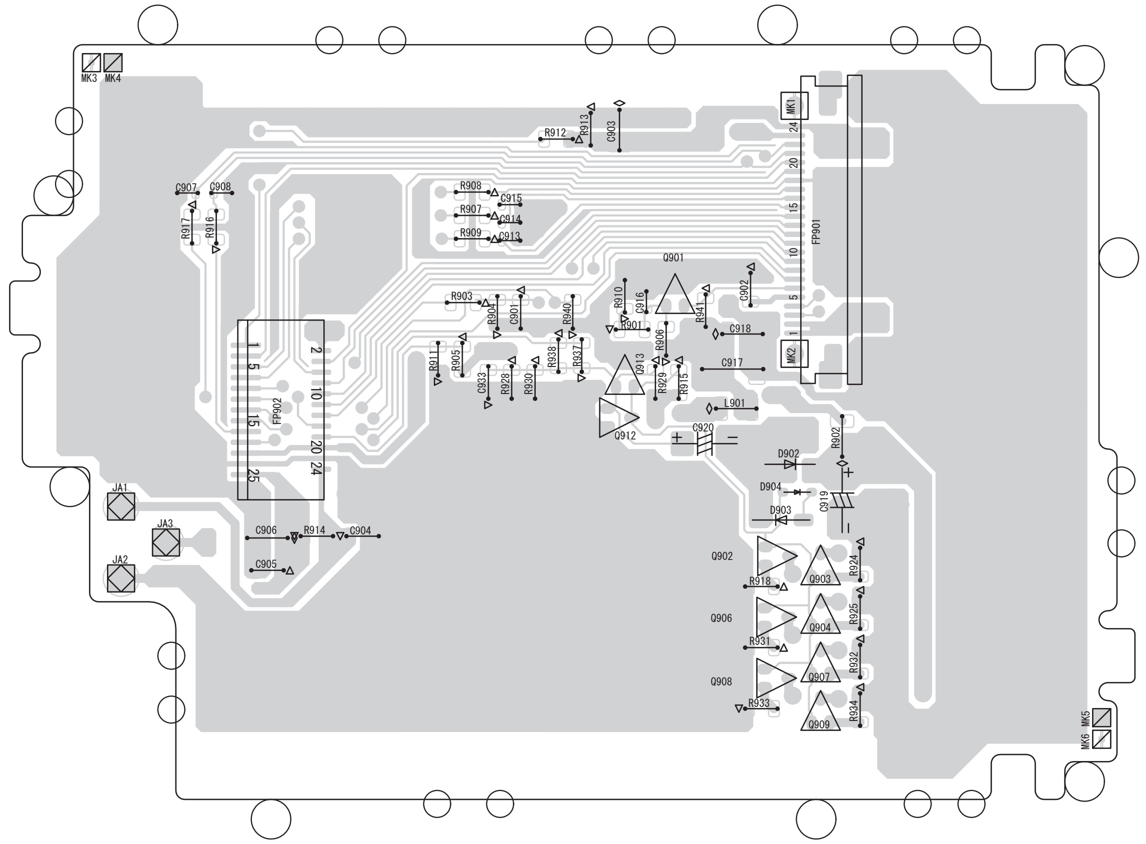
(Foil Side)

NV-MD10000GC/GK
Side R Operation P.C.B.

S5.7. Monitor P.C.B.



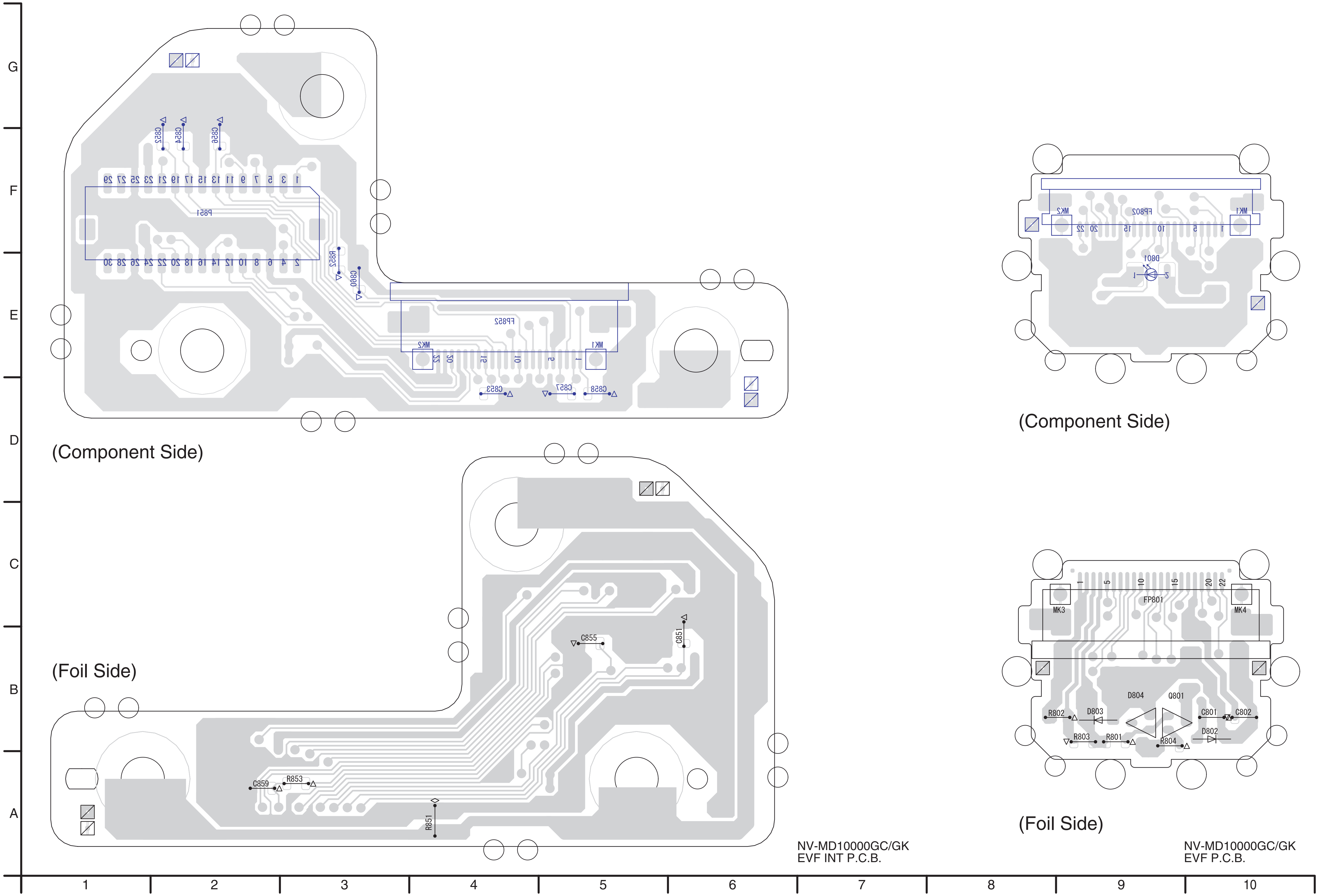
(Component Side)



(Foil Side)

NV-MD10000GC/GK
Monitor P.C.B.

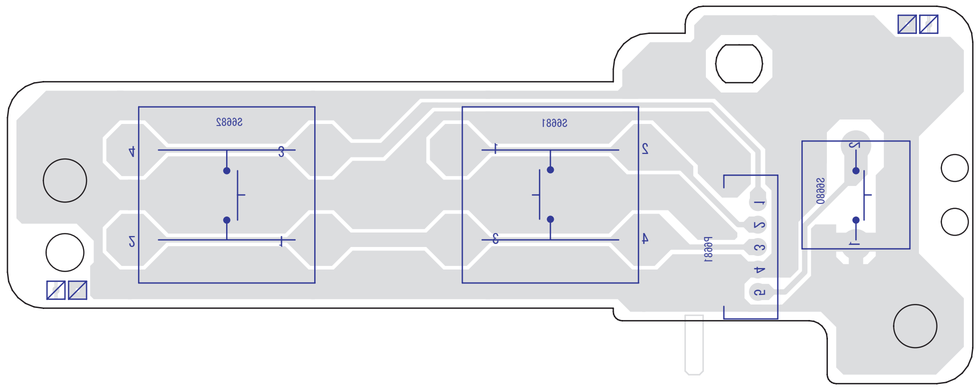
S5.8. EVF INT P.C.B. / S5.9. EVF P.C.B.



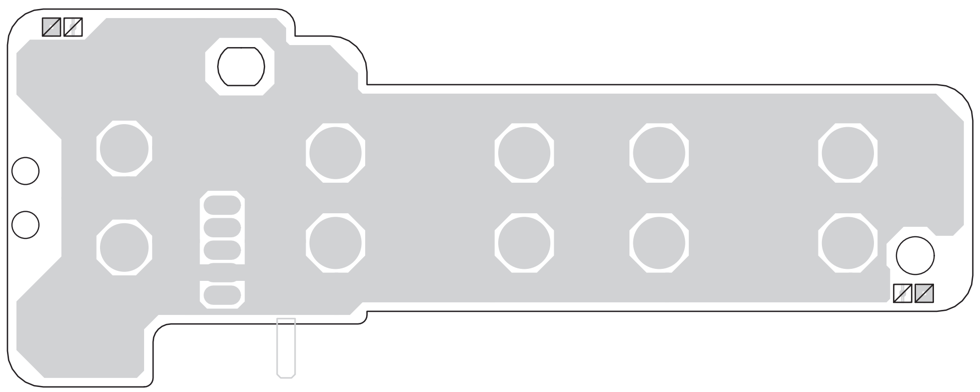
NV-MD10000GC/GK
EVF INT P.C.B.

NV-MD10000GC/GK
EVF P.C.B.

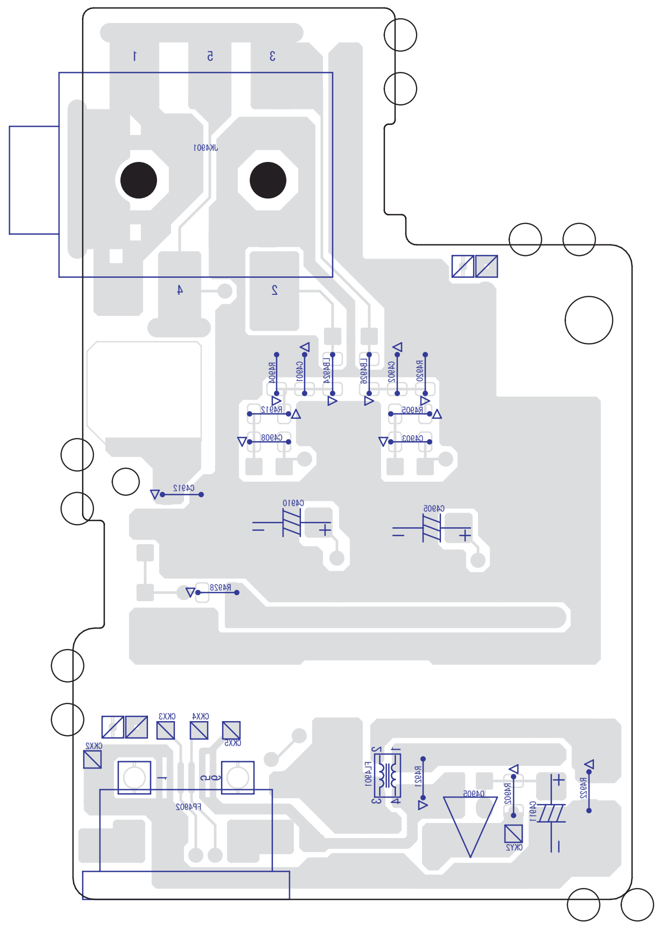
S5.10. Handle Zoom P.C.B. / S5.11. Mic Jack P.C.B.



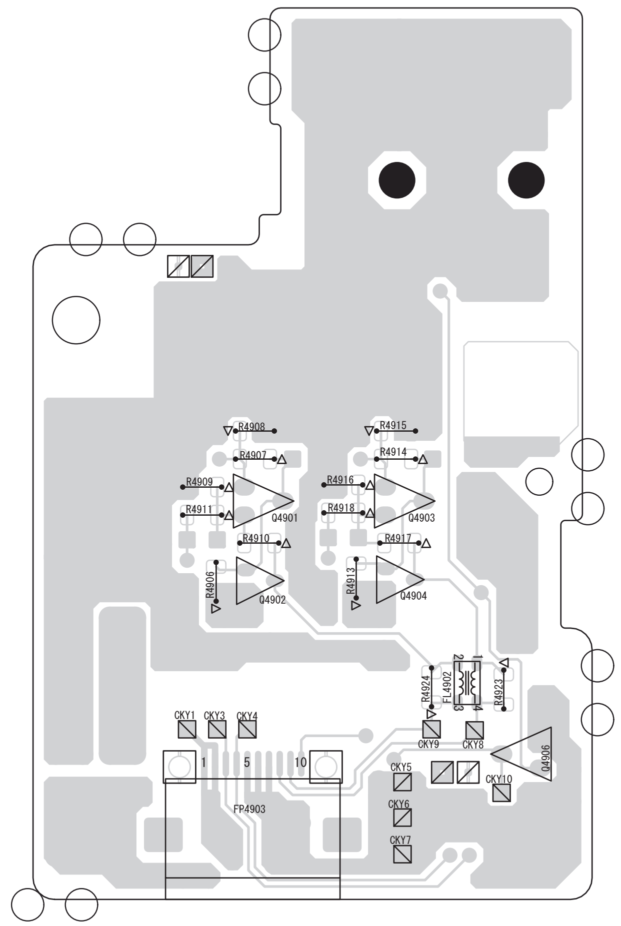
(Component Side)



(Foil Side)



(Component Side)

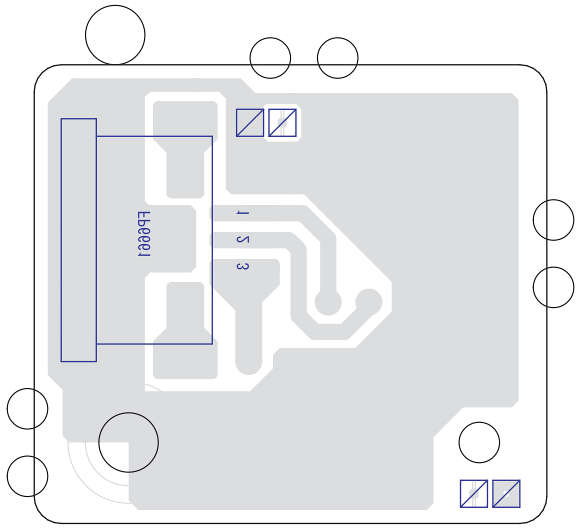


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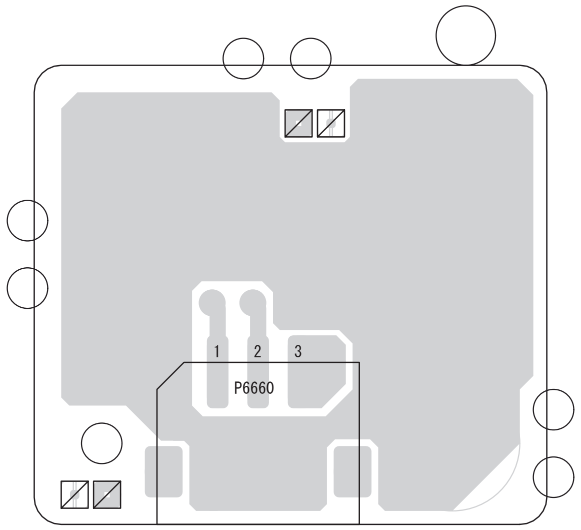
NV-MD10000GC/GK
Handle Zoom P.C.B.

NV-MD10000GC/GK
Mic Jack P.C.B.

S5.12. Zoom P.C.B. / S5.13. Front P.C.B.

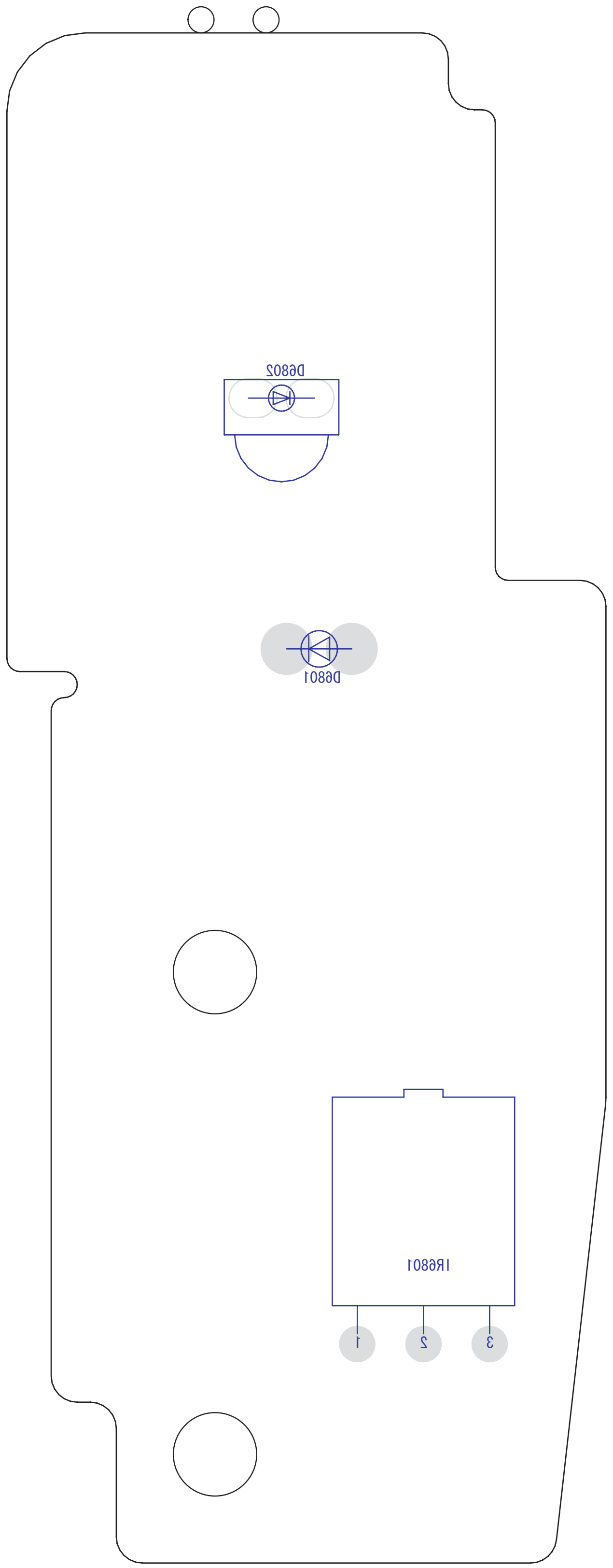


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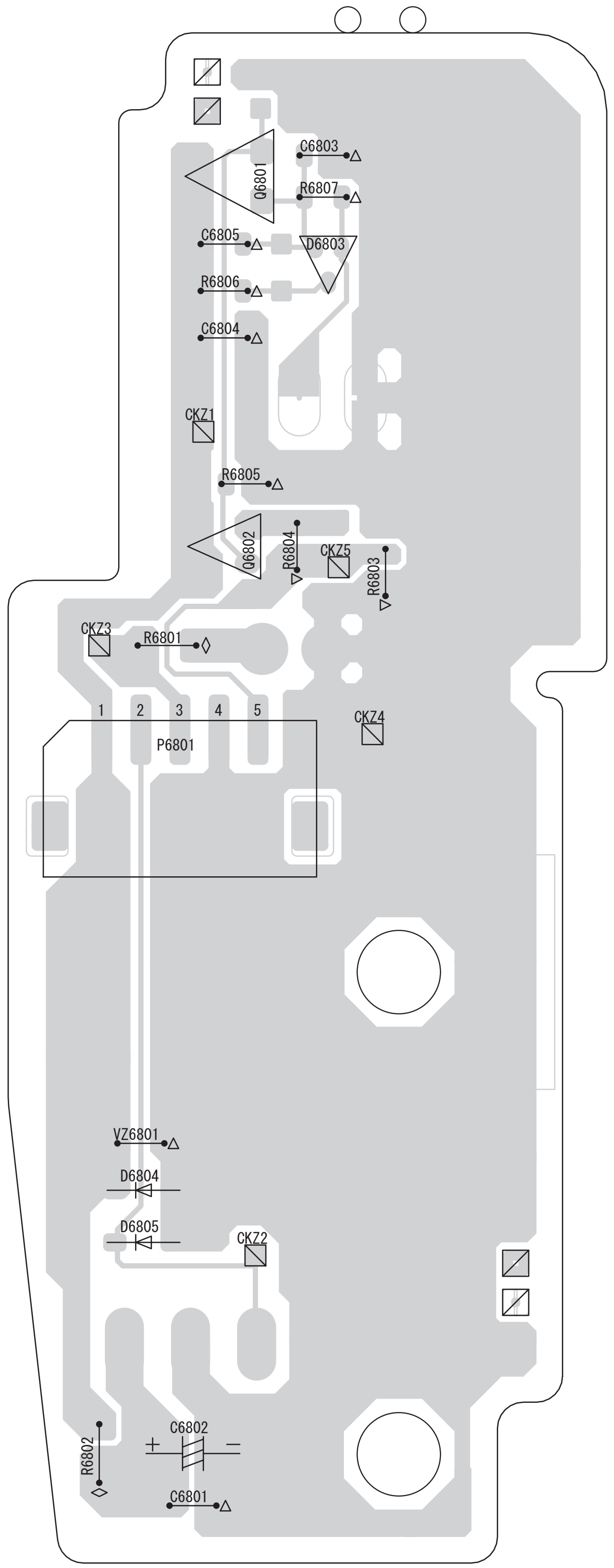


(Foil Side)

NV-MD10000GC/GK
Zoom P.C.B.



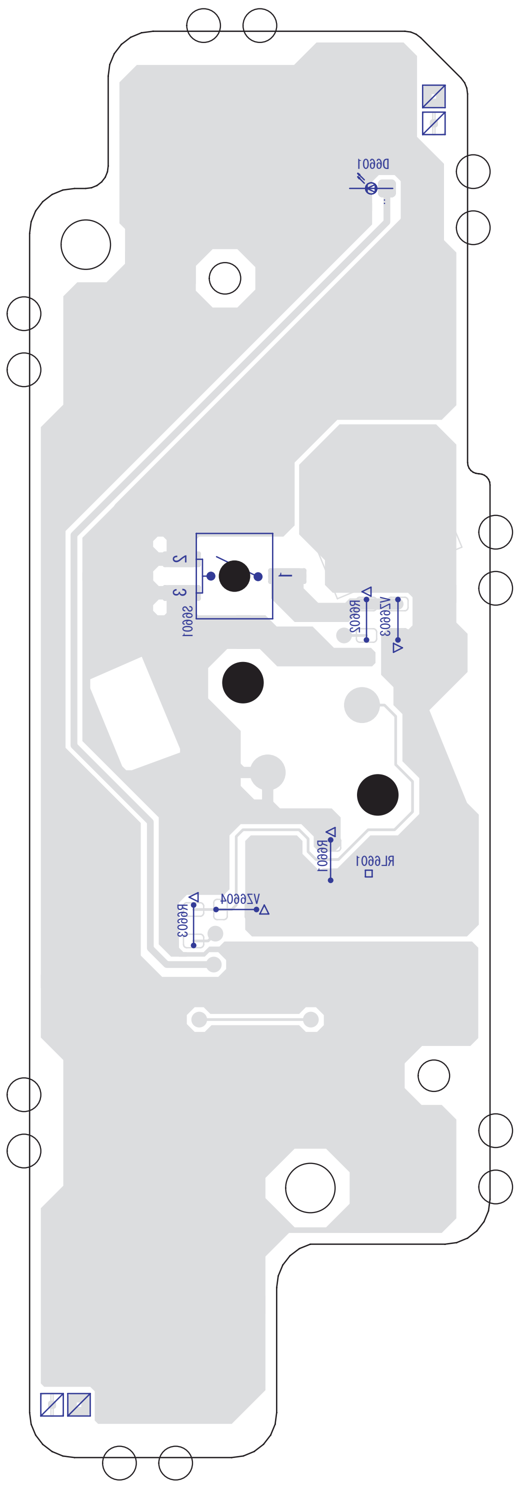
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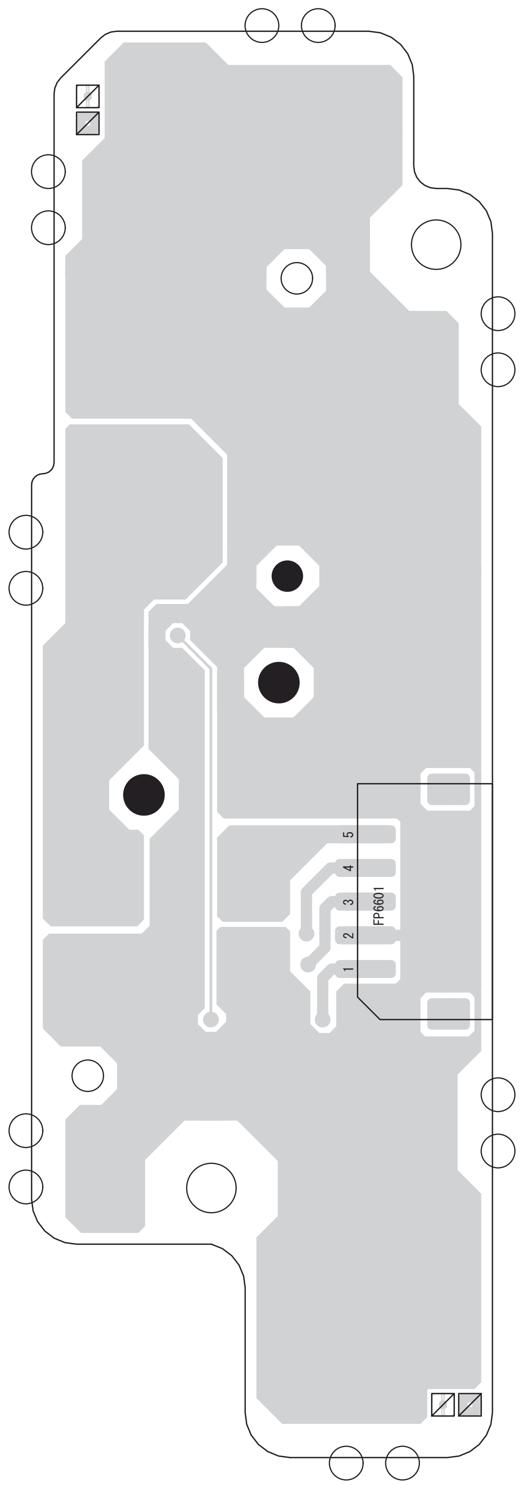
(Foil Side)

NV-MD10000GC/GK
Front P.C.B.

S5.14. S/S Power P.C.B. / S5.15. LCD Det P.C.B.

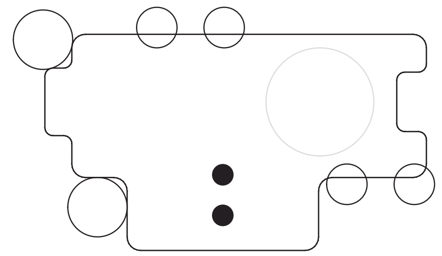


(Component Side)

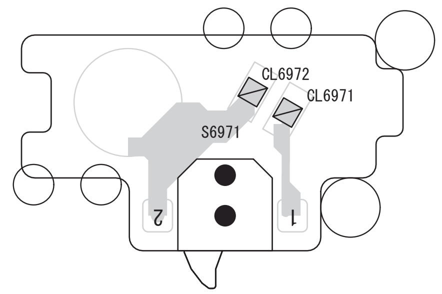


(Foil Side)

NV-MD10000GC/GK
S/S Power P.C.B.



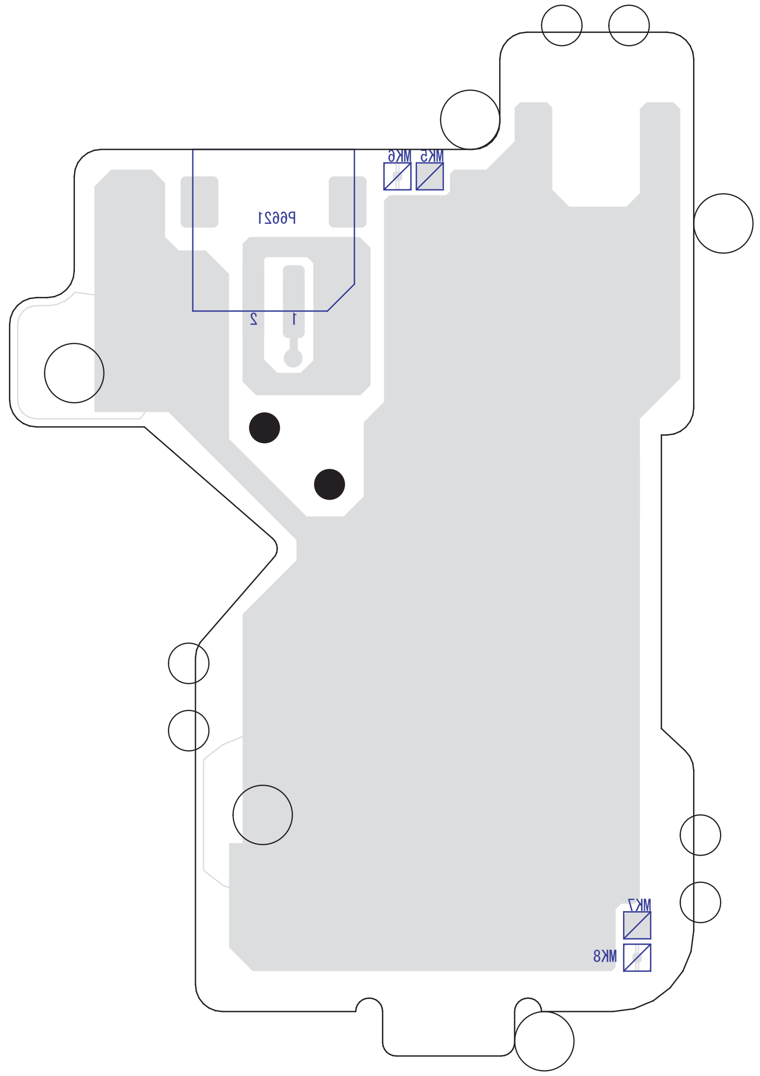
(Component Side)



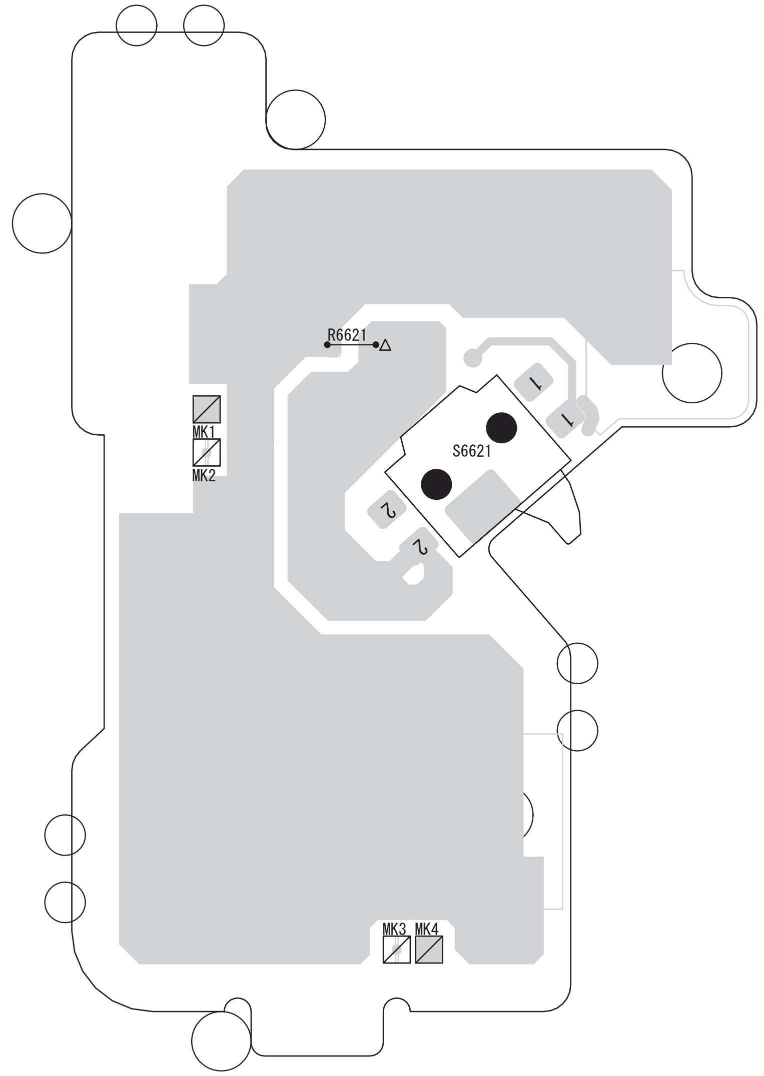
(Foil Side)

NV-MD10000GC/GK
LCD Det P.C.B.

S5.16. Eject P.C.B.



(Component Side)

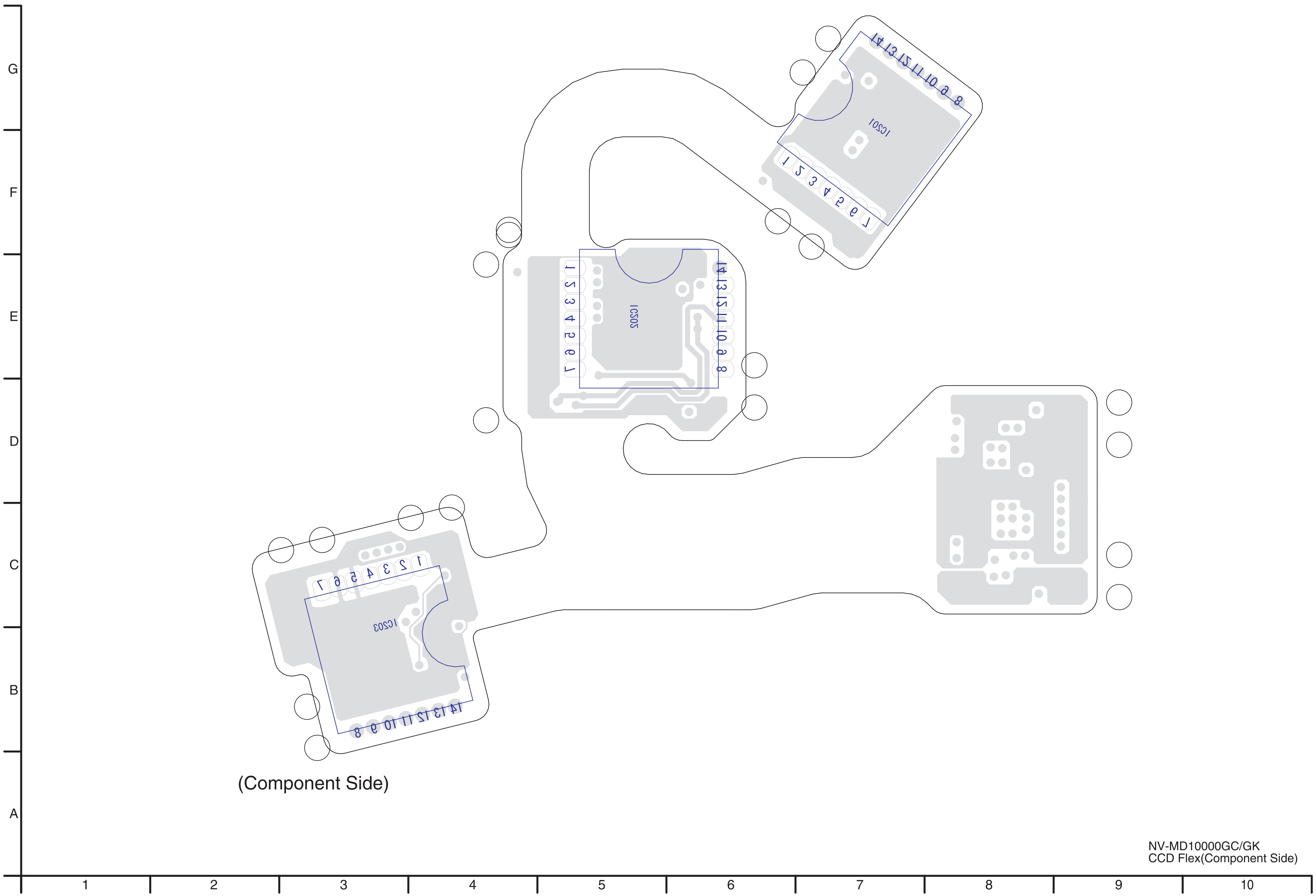


(Foil Side)

NV-MD10000GC/GK
Eject P.C.B.

S5.17. CCD Flex

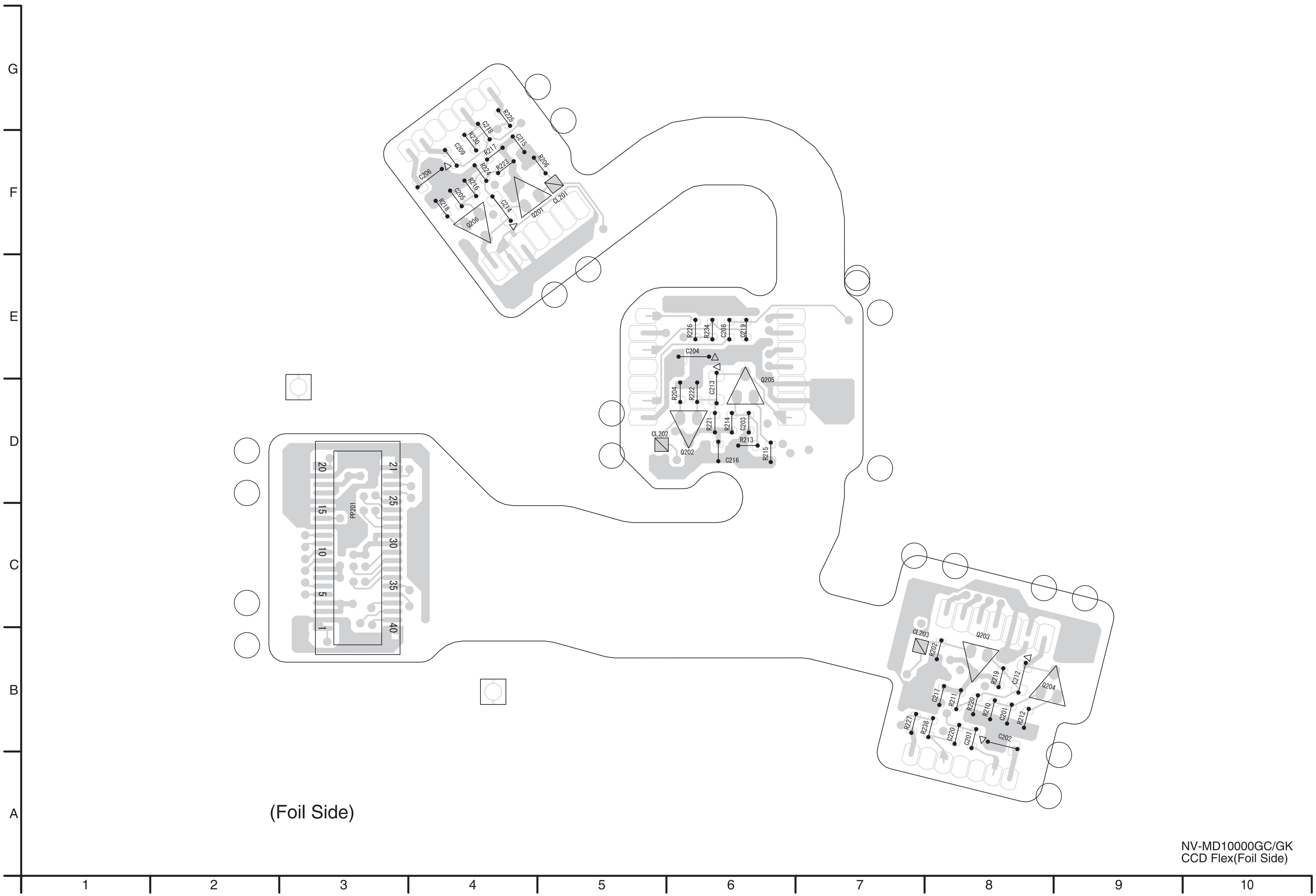
S5.17.1. CCD Flex (Component Side)



(Component Side)

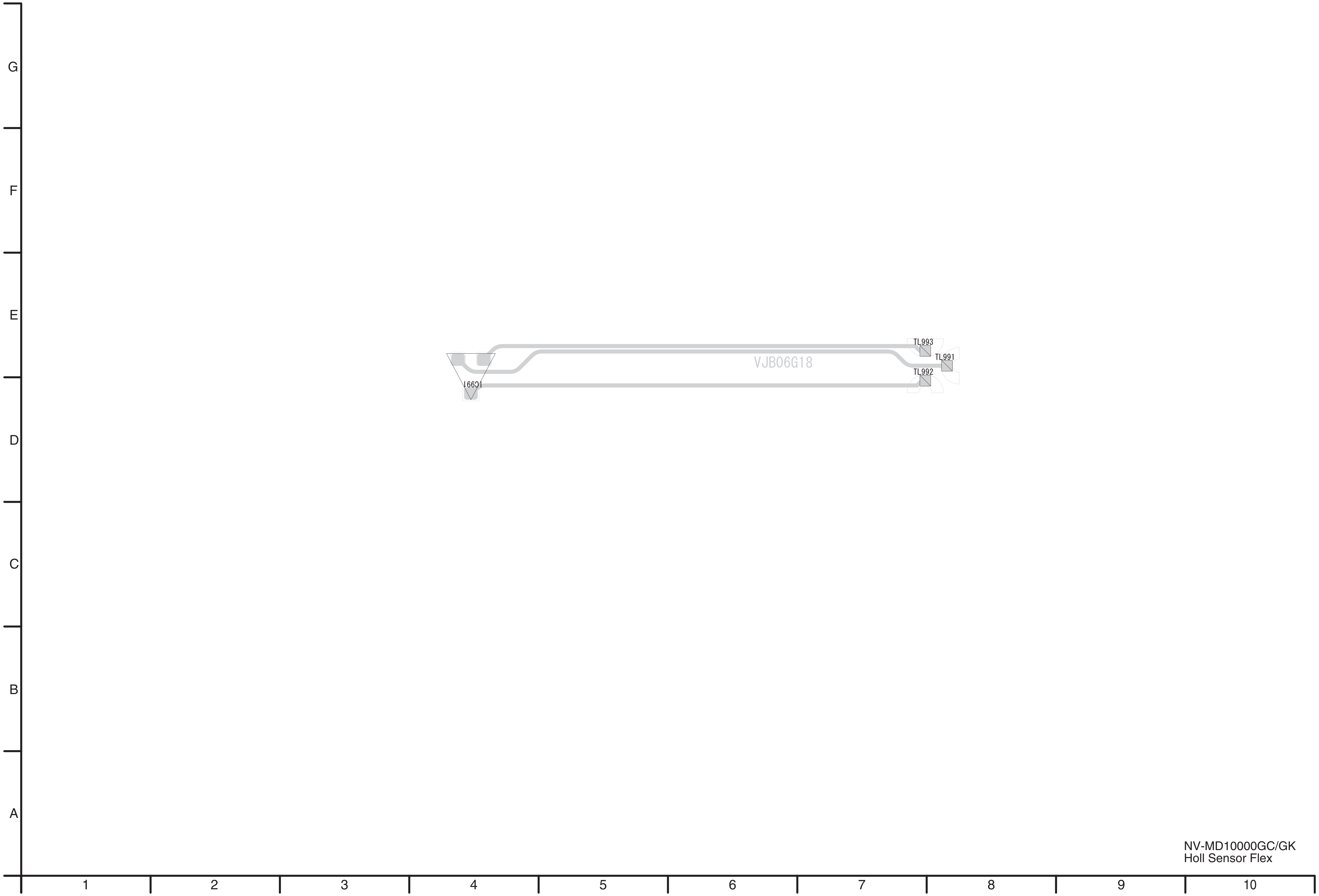
NV-MD10000GC/GK
CCD Flex(Component Side)

S5.17.2. CCD Flex (Foil Side)



NV-MD10000GC/GK
CCD Flex(Foil Side)

S5.18. Holl Sensor Flex



S6. Replacement Parts List

Note:
1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety.
   When replacing any of these components, use only the same type.
3. Unless otherwise specified,
   All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

E.S.D. standerds for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section.

Definition of Parts supplier:

1. **Parts marked with [PAVC-CSG] in the remarks column are supplied from PAVC COMPANY CS Group (PAVC-CSG).**

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■	04	VEP06G01A(EVR INT P.C.B.)		(RTL)
FP6852	K1MN18A00064	CONNECTOR 18P	1	
PP6851	K1KA20A00275	CONNECTOR 20P	1	
■	05	VEP06G02A(EVR INT 2 P.C.B.)		(RTL)
FP6855	K1MN18BA0107	CONNECTOR 18P	1	
PP6856	K1KA20A00306	CONNECTOR 20P	1	
■	06	VEP01970A(BATTERY INT P.C.B		(RTL)
C6754	ECJ2YB0J475K	C.CAPACITOR CH 6.3V 4.7U	1	
FL6751	VLF1378	FILTER	1	
FP6751	K1MN14BA0083	CONNECTOR 14P	1	
⚠ IP1001	K5H4021A0004	FUSE	1	
JK6751	K2EC3A000001	DC JACK	1	
LB1001	VLP0332A420	CHIP BEAD	1	J0JHC0000017
P6751	VJP1230T	CONNECTOR (MALE) 3P	1	K1KA03A00017
R6751	ERJ2GEJ473Y	M.RESISTOR CH 1/16W 47K	1	
R6752	D0YAR0000007	M.RESISTOR CH 1/16W 0	1	
■	07	VEP04890A(AV JACK P.C.B.)		(RTL)
C4502	ECJ1VB1H103K	C.CAPACITOR CH 50V 0.01U	1	
C4503	ECJ1VB1H472K	C.CAPACITOR CH 50V 4700P	1	
C4505	ECJ1VB1H103K	C.CAPACITOR CH 50V 0.01U	1	
C4507	ECJ1VB1H472K	C.CAPACITOR CH 50V 4700P	1	
C4510	ECJ1VB0J105K	C.CAPACITOR CH 6.3V 1U	1	
FL4501	J0MAB0000116	FILTER	1	
FL4502	J0MAB0000116	FILTER	1	
FL4503	J0MAB0000116	FILTER	1	
FP4501	K1MN26AA0058	CONNECTOR 26P	1	
JK4501	K2HZ106B0008	JACK	1	
JK4502	K2HC103B0143	JACK	1	
JK4503	K2HA306B0067	JACK	1	
JK4504	K2HZ105E0008	JACK	1	
JK4505	K1FA104B0025	JACK	1	
LB4501	J0JBC0000034	FILTER	1	
LB4502	J0JBC0000034	FILTER	1	
LB4503	VLF1144A102	COIL 1000UH	1	
LB4505	J0JBC0000034	FILTER	1	
LB4507	VLF1144A102	COIL 1000UH	1	
LB4508	VLF1144A102	COIL 1000UH	1	
LB4509	VLF1144A102	COIL 1000UH	1	
LB4510	VLF1144A102	COIL 1000UH	1	
LB4511	VLF1144A102	COIL 1000UH	1	
R4501	ERJ6GEYJ102V	M.RESISTOR CH 1/10W 1K	1	
VZ4502	D4ED1120A002	TRANSIENT/SURGE ABSORBER	1	
VZ4504	D4ED1270A008	TRANSIENT/SURGE ABSORBER	1	
VZ4505	D4ED1270A008	TRANSIENT/SURGE ABSORBER	1	
VZ4506	D4ED1120A002	TRANSIENT/SURGE ABSORBER	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■	08	VEP001K5A(SIDE (R) P.C.B.)		(RTL)
FP6701	K1MN45B00029	CONNECTOR 45P	1	
FP6702	K1MN26BA0083	CONNECTOR 26P	1	
FP6703	K1MN12BA0059	CONNECTOR 12P	1	
P6701	K1KA02BA0047	CONNECTOR 2P	1	
R6701	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	1	D0GBR00JA017
R6702	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	1	D0GBR00JA017
S6301	K0H1BA000436	SWITCH	1	
■	09	VEP001K9A(SIDE (R) OPERATIO		(RTL)
D6951	SML-310MT	LED	1	B3ABB0000091
FP6951	K1MN12BA0059	CONNECTOR 12P	1	
R6951	D0GB103JA057	M.RESISTOR CH 1/10W 10K	1	
R6952	ERJ3GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R6953	D0GB103JA057	M.RESISTOR CH 1/10W 10K	1	
R6954	ERJ3GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R6955	ERJ3GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R6956	ERJ3GEYD153V	M.RESISTOR CH 1/10W 15K	1	D0HB153ZA002
R6957	D0GB473JA057	M.RESISTOR CH 1/10W 47K	1	
R6958	ERJ3GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R6959	D0GB123JA057	M.RESISTOR CH 1/10W 12K	1	
R6960	ERJ3GEYJ273	M.RESISTOR CH 1/10W 27K	1	
S6951	EVQQW101M	SWITCH	1	
S6952	EVQQW101M	SWITCH	1	
S6953	EVQQW101M	SWITCH	1	
S6954	EVQQW101M	SWITCH	1	
S6955	EVQQW101M	SWITCH	1	
S6956	EVQQW101M	SWITCH	1	
S6957	EVQQW101M	SWITCH	1	
S6958	VSS0533	SLIDE SWITCH	1	K0D112A00116
S6959	RSS2A018-A	SWITCH	1	K0D112B00055
■	10	VEP08344A(MONITOR P.C.B.)		(RTL)
C901	ECJ1VB0J105K	C.CAPACITOR CH 6.3V 1U	1	
C902	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C903	F1J1A475A023	C.CAPACITOR CH 10V 4.7U	1	
C905	ECJ1VB0J105K	C.CAPACITOR CH 6.3V 1U	1	
C913	ECJ0EC1H390J	C.CAPACITOR CH 50V 39P	1	
C914	ECJ0EC1H390J	C.CAPACITOR CH 50V 39P	1	
C915	ECJ0EC1H390J	C.CAPACITOR CH 50V 39P	1	
C916	ECJ0EB1A104K	C.CAPACITOR CH 10V 0.1U	1	
C918	F1J1A475A023	C.CAPACITOR CH 10V 4.7U	1	
C933	ECJ1VB0J105K	C.CAPACITOR CH 6.3V 1U	1	
D902	B0BC6R100025	DIODE	1	
D905	B3AFB0000082	LED	1	
D906	B3AFB0000082	LED	1	
D907	B3AFB0000082	LED	1	
D908	B3AFB0000082	LED	1	
D909	B3AFB0000082	LED	1	
D910	B3AFB0000082	LED	1	
D911	B3AFB0000082	LED	1	
FP901	K1MN24BA0055	CONNECTOR 24P	1	
FP902	K1MN25B00072	CONNECTOR 25P	1	
IC991	DN8797MS	IC	1	
L901	G1C101KA0055	CHIP INDUCTOR 100UH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
Q901	B1ADBE000001	TRANSISTOR	1	
Q902	2SD2216J0L	TRANSISTOR	1	
Q903	2SD2216J0L	TRANSISTOR	1	
Q904	2SD2216J0L	TRANSISTOR	1	
Q906	2SD2216J0L	TRANSISTOR	1	
Q907	2SD2216J0L	TRANSISTOR	1	
Q908	2SD2216J0L	TRANSISTOR	1	
Q909	2SD2216J0L	TRANSISTOR	1	
Q913	B1ADBE000001	TRANSISTOR	1	
R901	ERJ3RBD122	M.RESISTOR CH 1/16W 1.2K	1	
R902	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	1	D0GBR00JA017
R903	ERJ3RBD182	M.RESISTOR CH 1/16W 1.8K	1	
R904	ERJ3RBD153	M.RESISTOR CH 1/16W 15K	1	
R906	ERJ3RBD563	M.RESISTOR CH 1/16W 56K	1	ERJ3RBD563V
R907	ERJ3GEYJ331	M.RESISTOR CH 1/10W 330	1	
R908	ERJ3GEYJ331	M.RESISTOR CH 1/10W 330	1	
R909	ERJ3GEYJ331	M.RESISTOR CH 1/10W 330	1	
R910	ERJ3RBD822	M.RESISTOR CH 1/16W 8.2K	1	
R912	ERJ3RBD102	M.RESISTOR CH 1/16W 1K	1	
R913	ERJ3RBD472	M.RESISTOR CH 1/16W 4.7K	1	
R914	ERJ3GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R915	D0GB102JA057	M.RESISTOR CH 1/10W 1K	1	
R916	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
R917	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
R918	ERJ3RED270	M.RESISTOR CH 1/16W 27	1	
R924	ERJ3RED270	M.RESISTOR CH 1/16W 27	1	
R925	ERJ3RED270	M.RESISTOR CH 1/16W 27	1	
R930	ERJ3RBD103	M.RESISTOR CH 1/16W 10K	1	
R931	ERJ3RED270	M.RESISTOR CH 1/16W 27	1	
R932	ERJ3RED270	M.RESISTOR CH 1/16W 27	1	
R933	ERJ3RED270	M.RESISTOR CH 1/16W 27	1	
R934	ERJ3RED270	M.RESISTOR CH 1/16W 27	1	
R937	ERJ3RBD473	M.RESISTOR CH 1/16W 47K	1	
R940	D0GB103JA057	M.RESISTOR CH 1/10W 10K	1	
■	11	VEP02580A(EVF INT. P.C.B.)		(RTL)
FP852	K1MN22BA0056	CONNECTOR 22P	1	
P851	K1KA30AA0184	CONNECTOR 30P	1	
R851	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	1	D0GBR00JA017
R852	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
R853	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
■	12	VEP29167A(EVF P.C.B.)		(RTL)
C801	ECJ1VB0J474K	C.CAPACITOR CH 6.3V 0.47U	1	
C802	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
D801	B3AFB0000081	LED	1	
D802	MA8047M	DIODE	1	MAZ80470M
D803	B0BC6R100025	DIODE	1	
D804	MA3S13300L	DIODE	1	
FP801	K1MN22BA0056	CONNECTOR 22P	1	
FP802	K1MN22BA0055	CONNECTOR 22P	1	
Q801	2SD2216J0L	TRANSISTOR	1	
R801	ERJ3GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R804	ERJ3RED470	M.RESISTOR CH 1/16W 47	1	
■	13	VEP06G06A(HANDLE ZOOM P.C.B		(RTL)
P6681	VJP2274	CONNECTOR (MALE)	1	K1KA05A00105
S6680	K0H1BA000399	SWITCH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
S6681	K0H1BA000105	SWITCH	1	
S6682	K0H1BA000105	SWITCH	1	
■	14	VEP04889A(MIC JACK P.C.B.)		(RTL)
C4901	ECJ1VB1H472K	C.CAPACITOR CH 50V 4700P	1	
C4902	ECJ1VB1H472K	C.CAPACITOR CH 50V 4700P	1	
C4903	ECJ1VB0J105K	C.CAPACITOR CH 6.3V 1U	1	
C4905	F3F0J226A055	E.CAPACITOR CH 6.3V 22U	1	
C4908	ECJ1VB0J105K	C.CAPACITOR CH 6.3V 1U	1	
C4910	F3F0J226A055	E.CAPACITOR CH 6.3V 22U	1	
C4911	F3F0J476A047	E.CAPACITOR CH 6.3V 47U	1	
C4912	ECJ1XB1C104K	C.CAPACITOR CH 16V 0.1U	1	
FL4901	J0MAB0000140	FILTER	1	
FL4902	J0MAB0000140	FILTER	1	
FP4902	K1MN06BA0085	CONNECTOR 6P	1	
FP4903	K1MN10BA0059	CONNECTOR 10P	1	
JK4901	VJJ0414	JACK	1	K2HC105E0003
LB4924	VLF1144A102	COIL 1000UH	1	
LB4926	VLF1144A102	COIL 1000UH	1	
Q4901	2SD1819A-R	TRANSISTOR	1	2SD1819AR
Q4902	2SB1462JHL	TRANSISTOR	1	
Q4903	2SD1819A-R	TRANSISTOR	1	2SD1819AR
Q4904	2SB1462JHL	TRANSISTOR	1	
Q4905	2SD1819A-R	TRANSISTOR	1	2SD1819AR
Q4906	2SD1819A-R	TRANSISTOR	1	2SD1819AR
R4902	ERJ3GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4904	ERJ3RBD562	M.RESISTOR CH 1/16W 5.6K	1	
R4905	ERJ3GEYJ471	M.RESISTOR CH 1/10W 470	1	
R4906	ERJ3RBD103	M.RESISTOR CH 1/16W 10K	1	
R4907	VRE0071E154	M.RESISTOR 150K	1	D0HB154ZA004
R4908	ERJ3RBD563	M.RESISTOR CH 1/16W 56K	1	ERJ3RBD563V
R4909	D0GB102JA057	M.RESISTOR CH 1/10W 1K	1	
R4910	ERJ3GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4911	D0GB151JA057	M.RESISTOR CH 1/10W 150	1	
R4912	ERJ3GEYJ471	M.RESISTOR CH 1/10W 470	1	
R4913	ERJ3RBD103	M.RESISTOR CH 1/16W 10K	1	
R4914	VRE0071E154	M.RESISTOR 150K	1	D0HB154ZA004
R4915	ERJ3RBD563	M.RESISTOR CH 1/16W 56K	1	ERJ3RBD563V
R4916	D0GB102JA057	M.RESISTOR CH 1/10W 1K	1	
R4917	ERJ3GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4918	D0GB151JA057	M.RESISTOR CH 1/10W 150	1	
R4920	ERJ3RBD562	M.RESISTOR CH 1/16W 5.6K	1	
R4928	ERJ3GEYJ104	M.RESISTOR CH 1/10W 100K	1	
■	15	VEP06G05A(ZOOM P.C.B.)		(RTL)
FP6661	K1MN03BA0169	CONNECTOR 3P	1	
P6660	K1KA03BA0047	CONNECTOR 3P	1	
■	16	VEP06F13B(FRONT P.C.B.)		(RTL)
C6801	ECJ1XB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C6802	F3F0J106A055	E.CAPACITOR CH 6.3V 10U	1	
C6803	ECJ1VB1A224K	C.CAPACITOR CH 10V 0.22U	1	
C6804	ECJ1VB0J105K	C.CAPACITOR CH 6.3V 1U	1	
C6805	ECJ1VB1A224K	C.CAPACITOR CH 10V 0.22U	1	
D6801	LN28CALXU	DIODE	1	
D6802	B3GA00000047	PHOTO DETECTORS	1	
D6803	MA3S132D0L	DIODE	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
IR6801	B3RAB0000030	IR RECEIVER	1	
P6801	K1KA05BA0047	CONNECTOR 5P	1	
Q6801	2SD1030	TRANSISTOR	1	
Q6802	2SD1819A-R	TRANSISTOR	1	2SD1819AR
R6801	ERJ6ENF1800	M.RESISTOR CH 1/8W 180	1	
R6802	ERJ6GEYJ470V	M.RESISTOR CH 1/10W 47	1	
R6803	ERJ3GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6804	D0GB182JA057	M.RESISTOR CH 1/10W 1.8K	1	
R6805	ERJ3GEYJ334	M.RESISTOR CH 1/10W 330K	1	D0GB334JA002
R6806	D0GB225JA057	M.RESISTOR CH 1/10W 2.2M	1	
R6807	ERJ3GEYJ106	M.RESISTOR CH 1/10W 10M	1	
■	17	VEP06G03A(S/S & POWER P.C.B		(RTL)
D6601	B3AAB0000137	DIODE	1	
FP6601	K1KA05BA0047	CONNECTOR 5P	1	
R6602	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
R6603	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
S6601	ESE2131BT	SWITCH	1	
S6602	VMG0763	RUBBER SWITCH	1	
■	18	VEP001L0A(LCD DET. P.C.B.)		(RTL)
S6971	K0L1BA000102	SWITCH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■	M1	M1_GAISO		
1	VKF4043	EVR COVER	1	
2	VGQ6407	SHEET	1	
3	VGQ6037	BATTERY LOCK HOLDER	1	
4	VGU8749	BATTERY LOCK BUTTON	1	
5	VKF4041	USB COVER	1	
7	VMB3314	BATTERY COIL SPRING	1	
8	K4ZZ04000038	BATTERY CATCHER	1	
9	VGQ7231	BATTERY HOLDER	1	
10	VYQ3506	MECHA FRAME U	1	
11	VYK1Q59	SIDE CASE (L) 1U	1	
12	VSC5754	L EARTH PLATE B	1	
13	VGU8946	T/W BUTTON	1	
14	VGQ6365	ZOOM LEVER	1	
15	VMS7039	ZOOM SHAFT	1	
16	VGQ6281-1	GRIP SW BRACKET	1	
17	VGQ6278	ZOOM GEAR	1	
18	VYK1Q62	GRIP COVER (1) U	1	
19	D2ZGAZZB0004	ZOOM VR	1	
20	XUC2FP	E RING	1	
22	VEE1B79	ZOOM/PHOTO CABLE	1	
23	VMT1197	ZOOM PROTECT SHEET	1	
26	VGQ6071	OPERATION C.B.A. BASE	1	
28	VGL1153	VTR SELECT PANELIGHT	1	
29	VMC1271	S/S CLICK SPRING	1	
30	VMP8333	FRONT CBA FIXATION ANGLE	1	
31	VFC3902	GRIP BELT U	1	
32	VMP8331	BELT FIXATION ANGLE	1	
33	VGQ4494	S/S LEVER	1	
34	VGQ4272	S/S BUTTON PIECE	1	
35	VGU7577	S/S BUTTON	1	
36	VWJ1790	SIDE (R) FPC	1	
37	VSC5753	L EARTH PLATE A	1	
38	VJF1514	RCA COVER	1	
42	VMP8450	SHOULDER BELT PLATE (F)	1	
45	VMP8445	AV JACK ANGLE	1	
46	VMP8368	DV TERMINAL ANGLE	1	
48	VGQ5990	BATTERY CASE COVER	1	
49	VMP8330	WEIGHT ANGLE	1	
50	VMD2796	TRIPOD FRAME	1	
51	VMP8328	TRIPOD FRAME ANGLE	1	
53	VKW2418	REMOTE CONTROLLER WINDOW	1	
55	VYK1Q70	CASETTE COVER U	1	
60	VXP2522	MF RING U	1	
61	VFC4129	LENS HOOD U	1	
62	VYQ3508	ND FILTER CASE U	1	
65	VYK1Q80	LENS FRAME U	1	
66	VMG1357	FOCUS RING	1	
70	VWJ1752	JACK FPC	1	
71	VWJ1753	R FPC	1	
72	VWJ1785	EVR FPC	2	
73	VWJ1786	LCD FPC	1	
74	VEK0J34	EVF FPC (1)	1	
76	VEE1B80	FRONT CABLE	1	
78	VGQ3457	HIMELON	1	
79	VWJ1789	LENS INT. FPC	1	
80	VWJ1791	SIDE (L) INT. FPC	1	
81	VWJ1792	REAR INT. FPC	1	
82	VEK0J33	CCD INT FPC	1	
83	VWJ1785	EVR FPC	1	
84	VWJ1753	R FPC	1	
85	VEP03G83A	MAIN P.C.B.	1	(RTL)
86	VEP06G00A	MOTHER P.C.B.	1	(RTL)
87	VEP06G01A	EVR INT P.C.B.	1	(RTL)
88	VEP06G02A	EVR INT 2 P.C.B.	1	(RTL)
89	VEP01970A	BATTERY INT P.C.B.	1	(RTL)
90	VEP04890A	AV JACK P.C.B.	1	(RTL)
91	VEP06G05A	ZOOM P.C.B.	1	(RTL)
92	VEP06F13B	FRONT P.C.B.	1	(RTL)
93	VEP06G03A	S/S & POWER P.C.B.	1	(RTL)
B1	XQN2+BJ5FJK	SCREW	1	
B2	XTV26+8GFN	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
B3	XQN16+B5FJK	SCREW	1	
B4	XTV26+8GFN	SCREW	1	
B5	XTB3+10GFJK	SCREW	1	
B6	XTB3+10GFJK	SCREW	1	
B7	XTB3+10GFJK	SCREW	1	
B8	XQN16+B6FJK	SCREW	1	
B9	XQN16+B6FJK	SCREW	1	
B10	VHD1133	SCREW	1	
B11	VHD1133	SCREW	1	
B12	VHD1133	SCREW	1	
B13	VHD1353	SCREW	1	
B14	XQN16+B3FN	SCREW	1	
B15	XQN2+BJ6FJK	SCREW	1	
B16	XQN2+BJ6FJK	SCREW	1	
B17	XQN2+BJ6FJK	SCREW	1	
B18	XQN16+BJ4FN	SCREW	1	
B19	XQN16+BJ4FN	SCREW	1	
B24	XQN2+BJ6FJK	SCREW	1	
B25	XQN2+BJ6FJK	SCREW	1	
B26	XQN16+B5FJK	SCREW	1	
B27	XQN16+B5FJK	SCREW	1	
B28	XQN2+BJ5FN	SCREW	1	
B29	XQN2+BJ5FN	SCREW	1	
B30	XQN2+B5FJK	SCREW	1	
B31	XQN2+B5FJK	SCREW	1	
B32	XQN2+BJ5FJK	SCREW	1	
B33	XQN2+BJ4FJK	SCREW	1	
B34	XTV26+8GFN	SCREW	1	
B35	XTV26+8GFN	SCREW	1	
B36	XTV26+8GFN	SCREW	1	
B37	XTV26+8GFN	SCREW	1	
B38	XQN2+BJ35FN	SCREW	1	
B39	XTV26+8GFN	SCREW	1	
B40	XTV26+8GFN	SCREW	1	
B41	XQN16+B2FJK	SCREW	1	
B42	XQN16+B2FJK	SCREW	1	
B43	XTV3+8GFN	SCREW	1	
B45	XTB3+8FFJK	SCREW	1	
B46	XTB3+10GFJK	SCREW	1	
B47	XTB3+10GFJK	SCREW	1	
B49	XTB3+8FFJK	SCREW	1	
B50	XTB3+8FFJK	SCREW	1	
B51	XTB3+10GFJK	SCREW	1	
B52	XTB3+10GFJK	SCREW	1	
B53	XTB3+10GFJK	SCREW	1	
B55	XYN3+F6FN	SCREW	1	
B56	XYN3+F6FN	SCREW	1	
B57	XQN2+BJ4FN	SCREW	1	
B58	XQN2+BJ4FN	SCREW	1	
B59	XQN2+BJ5FN	SCREW	1	
B60	XQN2+BJ5FN	SCREW	1	
B61	XTN26+6GFN	SCREW	1	
B62	XTN26+6GFN	SCREW	1	
B63	XTB26+6GFJK	SCREW	1	
B64	XTB26+6GFJK	SCREW	1	
B65	XQN2+BJ4FJK	SCREW	1	
B66	XQN2+BJ4FJK	SCREW	1	
B67	XQN2+BJ4FJK	SCREW	1	
B68	XTB26+6GFJK	SCREW	1	
B69	XTB26+6GFJK	SCREW	1	
B70	XTB3+10GFJK	SCREW	1	
B71	XTB3+10GFJK	SCREW	1	
B72	XTB3+10GFJK	SCREW	1	
B73	XYN3+K6FN	SCREW	1	
B74	XYN3+K6FN	SCREW	1	
B75	XTB26+6GFJK	SCREW	1	
B76	XTB26+6GFJK	SCREW	1	
B77	XQN2+BJ4FN	SCREW	1	
B79	XQN2+BJ4FN	SCREW	1	
B80	XQN2+BJ4FN	SCREW	1	
B81	XQN2+BJ4FN	SCREW	1	
B82	XQN2+BJ4FN	SCREW	1	
B92	XQN16+B3FN	SCREW	1	
B93	XQN16+B3FN	SCREW	1	
B97	XQN2+BJ5FN	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
B98	XTB3+8FFJK	SCREW	1	
B99	XTB3+8FFJK	SCREW	1	
W1	XUC15FP	WASHER	1	
■	M2	M1_GAISO		
101	VYK1Q72	SIDE CASE (R) 1U	1	
102	VYK0L28	SPEAKER HOLDER U	1	
103	VGU9871	CAMERA OPARATION BUTTON	1	
104	VGU8945	RESET BUTTON	1	
105	VSC5758	HINGE EARTH PLATE	1	
107	VMP8327	HANDLE HOLD ANGLE (REAR)	1	
108	VGQ6038	MIC HOLDER PLATE	1	
109	VMP7613	BELT ANGLE (REAR)	1	
110	VMP2407	SHOE HOLD PLATE	1	
111	VMC1288	SHOE SPRING	1	
112	VKF4044	HANDLE COVER	1	
113	VGL1142	PANEL LIGHT	1	
114	VGU9872	SLIDE BUTTON	1	
115	VGU9872	SLIDE BUTTON	1	
116	VGQ5995	SLIDE COVER	1	
117	VJF0804	LENS CABLE CLAMPER	1	
118	VKM6796-1	EVF CASE TOP	1	
119	VKM6797-2	EVF CASE BOTTOM	1	
120	VEE1B81	EVF CABLE	1	
121	VLF1319	CLAMP	1	J0KG00000001
122	J0KG00000100	CLAMP	1	
123	VKH0396-6	HANDLE	1	
124	RGB0116-S	PANASONIC BADGE	1	
125	VYQ3507	VIEW ADJ. CASE U	1	
125-1	VDL1533	EVF LENS	1	
127	L5BDDXH00014	EVF PANEL	1	
128	VMP2407	SHOE HOLD PLATE	1	
129	VMC1288	SHOE SPRING	1	
131	VGQ8284	LCD HOLDER PIECE	1	
132	VGL1144	EVF DEFFUSION SHEET	1	
133	VGL1145	BL PRISM PANEL	1	
134	VGQ8346	LCD PIECE	1	
135	VGQ7102	BL PIECE	1	
136	VMG1464	EYE CAP	1	
137	VGQ7689	PLATE HOLDING PIECE	1	
138	VGL1136	LENS PANEL	1	
139	VGQ8708	PORON SHEET	1	
143	VWJ1767	EVF FPC	1	
145	VMG1372	O-RING	1	
146	VGQ6999	EVF LOCK RING	1	
147	VGQ7001	EVF BUSH	1	
148	VGQ5994	EVF RING	1	
149	VMT1725	EVF RING TAPE	1	
150	VMG1372	O-RING	1	
151	VMP8453	DET. SW ANGLE	1	
152	VEE1B82	HANDLE ZOOM WIRE U	1	
153	VMZ3182	ZOOM CBA INSULATION SHEET	1	
154	VYF2870	HANDLE COVER (1) U	1	
154-1	VMS7039	ZOOM SHAFT	1	
158	VMP8329	MIC JACK SHIELD	1	
159	VMP8326	HANDLE HOLD ANGLE (FRONT)	1	
160	VYK1Q69	MIC CASE U	1	
160-2	VGQ6148	PORON SHEET	1	
166	VSC4666	MIC JACK SHIELD	1	
167	VWJ1784	FPC	1	
168	VYK1Q81	FACE PANEL U	1	(GC)
168	VYK1R29	FACE PANEL U	1	(GK)
169	VMG1355	SHOULDER PAD	1	
171	VJF1526	COATING CLIP	1	
172	VGQ7110	MIC SPACER	1	
177	VWJ1795	FPC	1	
178	VWJ1753	FFC	1	
179	VEP001K5A	SIDE (R) P.C.B.	1	(RTL)
180	VEP001K9A	SIDE (R) OPERATION P.C.B.	1	(RTL)
181	VEP02580A	EVF INT. P.C.B.	1	(RTL)
182	VEP29167A	EVF P.C.B.	1	(RTL)

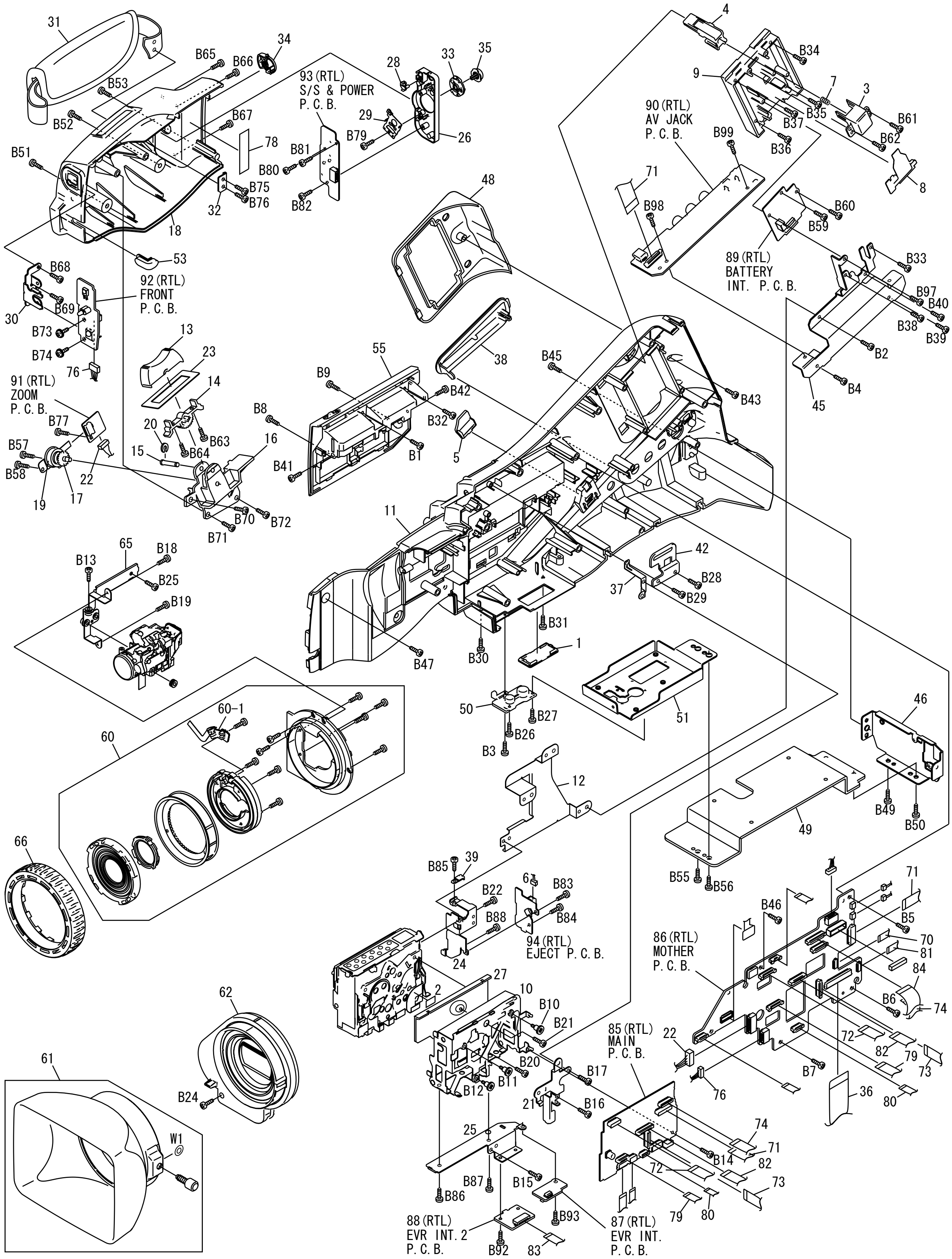
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
183	VEP06G06A	HANDLE ZOOM P.C.B.	1	(RTL)
184	VEP04889A	MIC JACK P.C.B.	1	(RTL)
185	VEP001L0A	LCD DET. P.C.B.	1	(RTL)
B101	XQN2+B5FJK	SCREW	1	
B102	XQN2+B5FJK	SCREW	1	
B103	XQN2+B5FJK	SCREW	1	
B104	XTB3+10GFJK	SCREW	1	
B105	XTB3+10GFJK	SCREW	1	
B106	XTB3+10GFJK	SCREW	1	
B107	XTB3+10GFJK	SCREW	1	
B108	XTB3+10GFJK	SCREW	1	
B109	XTB3+10GFJK	SCREW	1	
B110	XTB3+10GFJK	SCREW	1	
B111	XTB3+10GFJK	SCREW	1	
B112	XTB3+10GFJK	SCREW	1	
B113	XTB3+10GFJK	SCREW	1	
B114	XTB3+10GFJK	SCREW	1	
B115	XTB3+10GFJK	SCREW	1	
B116	XTB3+10GFJK	SCREW	1	
B117	XTB3+10GFJK	SCREW	1	
B118	XYN3+J10FJK	SCREW	1	
B119	XYN3+J10FJK	SCREW	1	
B120	XYN3+J10FJK	SCREW	1	
B121	XYN3+J10FJK	SCREW	1	
B122	XTV4+8GFN	SCREW	1	
B123	XTV4+8GFN	SCREW	1	
B124	XTV4+8GFN	SCREW	1	
B125	XTV4+8GFN	SCREW	1	
B126	XYN26+K6FN	SCREW	1	
B127	XYN26+K6FN	SCREW	1	
B129	XTB3+10GFJK	SCREW	1	
B134	XTN3+8GFJK	SCREW	1	
B135	XTN3+8GFJK	SCREW	1	
B136	XQN2+BJ6FN	SCREW	1	
B137	XQN2+BJ6FN	SCREW	1	
B138	XQN2+BJ6FN	SCREW	1	
B139	XQN2+BJ6FN	SCREW	1	
B140	XQN2+BJ6FN	SCREW	1	
B141	XQN2+BJ6FN	SCREW	1	
B142	XQN2+BJ6FN	SCREW	1	
B143	XQN16+B2FN	SCREW	1	
B144	XQN16+B2FN	SCREW	1	
B145	XQN2+B3FJK	SCREW	1	
B146	XTB3+10GFJK	SCREW	1	
B147	XTB3+10GFJK	SCREW	1	
B148	XTB3+10GFJK	SCREW	1	
B149	XTB3+10GFJK	SCREW	1	
B150	XTB3+10GFJK	SCREW	1	
B151	XQS2+AJ7FJK	SCREW	1	
B152	XQS2+AJ7FJK	SCREW	1	
B153	XQS2+AJ7FJK	SCREW	1	
B154	XQS2+AJ7FJK	SCREW	1	
B159	XQN2+CJ6FJK	SCREW	1	
B160	XQN2+CJ6FJK	SCREW	1	
B161	XQN2+CJ6FJK	SCREW	1	
B162	XQN2+CJ6FJK	SCREW	1	
B163	XQN2+CJ6FJK	SCREW	1	
B164	XTN26+8GFJK	SCREW	1	
B165	XTN26+8GFJK	SCREW	1	
B166	XTN26+8GFJK	SCREW	1	
B167	XTN26+8GFJK	SCREW	1	
B168	XTN26+8GFJK	SCREW	1	
B169	XTN26+8GFJK	SCREW	1	
B170	XTN26+8GFJK	SCREW	1	
B171	XTN3+10GFN	SCREW	1	
B172	XTN3+10GFN	SCREW	1	
B173	XQN2+BJ6FN	SCREW	1	
B174	XQN2+BJ6FN	SCREW	1	
B175	XQN2+BJ6FN	SCREW	1	
B176	XQN2+BJ6FN	SCREW	1	
B177	XQN2+BJ6FN	SCREW	1	
B179	XQN2+B3FJK	SCREW	1	
B180	XQS2+AJ7FJK	SCREW	1	
B181	XQS2+AJ7FJK	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
B182	XQS2+AJ7FJK	SCREW	1	
B183	XQS2+AJ7FJK	SCREW	1	
B184	XSB26+4FN	SCREW	1	
B185	XSB26+4FN	SCREW	1	
B186	XQN2+B4FN	SCREW	1	
B187	XQN2+B4FN	SCREW	1	
B188	XQN2+B4FN	SCREW	1	
B189	XQN2+B4FN	SCREW	1	
B190	XQN2+B4FN	SCREW	1	
B191	XQN2+B5FN	SCREW	1	
B192	XQN2+B5FN	SCREW	1	
B193	XQN16+CJ5FN	SCREW	1	
B194	XQN16+CJ5FN	SCREW	1	
B195	XQN16+CJ5FN	SCREW	1	
B197	XQN2+BJ8FN	SCREW	1	
B198	XQN2+BJ8FN	SCREW	1	
B199	XTB3+10GFJK	SCREW	1	
■	M3	M3_GAISO		
201	VYK1Q75	LCD CASE TOP U	1	
201-1	VGU9889	LCD LOCK BUTTON	1	
201-2	VMP6774	LOCK BUTTON FIX. ANGLE	1	
201-3	VMB3505	LCD LOCK SPRING	1	
202	VYK1Q77	LCD CASE BOTTOM U	1	
203	VSC5756	LCD SHIELD CASE	1	
204	L5BDDYH00019	LCD PANEL U	1	
205	VGQ8351	MONITOR SHEET	1	
206	VGL1137	PRISM SHEET A	1	
207	VGL1138	PRISM SHEET B	1	
208	VGL1109	SHEET	1	
209	VKW3178	POLARIZATION PLATE	1	
210	VGL1143	REFLECTION SHEET	1	
212	VXD0450	LCD HINGE (1) U	1	
213	VGQ8564	HINGE COVER BOTTOM	1	
214	VGQ8563	HINGE COVER TOP	1	
216	VSC5755	LCD FRAME	1	
217	VMP8452	HINGE SUPPORT PLATE	1	
218	VGQ8562	LCD HINGE HOLDER	1	
219	VEP08344A	MONITOR P.C.B.	1	(RTL)
B201	VHD1411	SCREW	1	
B202	VHD1411	SCREW	1	
B203	XQN16+BJ6FJK	SCREW	1	
B204	XQN16+BJ6FJK	SCREW	1	
B205	XQN16+BJ4FN	SCREW	1	
B206	XQN16+BJ4FN	SCREW	1	
B207	VHD1709	SCREW	1	
B208	VHD1709	SCREW	1	
■	M4	M4_GAISO		
301	VXQ1358	PRISM U	1	
302	VMX3456	CCD CUSHION	1	
303	VDL1646	CRYSTAL OPTICS FILTER	1	
304	VXW0701	LENS U	1	
304-1	VDW1109	MASTER FLANGE	1	
304-2	VXP2431	4TH MOVING FRAME U	1	
304-3	VXQ1309	3RD MOVING FRAME U	1	
304-4	L6HA64NC0002	FOCUS MOTOR U	1	
304-5	VXP2434	IRIS U	1	
304-6	VMS7312	GUIDE POLE	1	
304-7	VMS7312	GUIDE POLE	1	
304-8	VXP2429	2ND MOVING FRAME U	1	
304-9	VXQ1308	LENS MAIN FRAME U	1	
304-10	L6HA64NC0001	ZOOM MOTOR U	1	
B301	XQN16+CJ5FJ	SCREW	1	
B302	XQN16+CJ5FJ	SCREW	1	
B303	XQN16+CJ7FJ	SCREW	1	
B304	XQN16+CJ7FJ	SCREW	1	

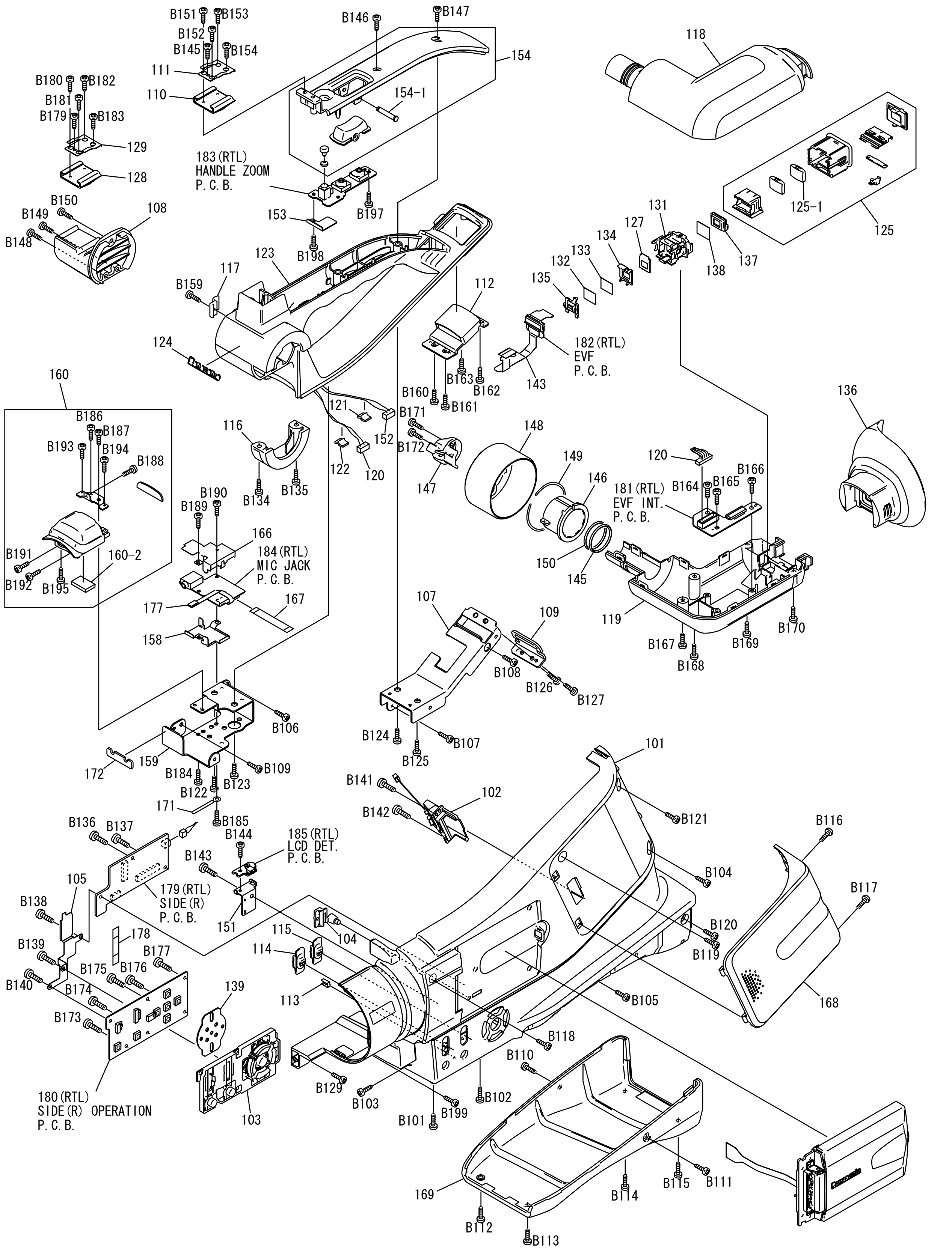
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
B305	XQN16+CJ7FJ	SCREW	1	
B306	XQN16+CJ5FJ	SCREW	1	
B307	XQN16+CJ5FJ	SCREW	1	
B308	XQN16+CJ5FJ	SCREW	1	
B309	XQN16+CJ5FJ	SCREW	1	
B310	XQN16+CJ5FJ	SCREW	1	
B311	XQN16+CJ5FJ	SCREW	1	
B312	XQN16+CJ5FJ	SCREW	1	
■	M5	M5_HOUSO		
401	VPG1E14	PACKING CASE	1	(GC)
401	VPG1E15	PACKING CASE	1	(GK)
⚠ 402	VQT0S76	OPERATING INSTRUCTION (CO	1	(GC)
⚠ 402	VQT0S77	OPERATING INSTRUCTION (PE	1	(GC)
⚠ 402	VQT0S78	OPERATING INSTRUCTION (CN	1	(GK)
403	VPN5481	CUSHION (T)	1	
404	VPN5482	CUSHION (B)	1	
405	VPK0825	ACCESSORIES PACKING	1	
⚠ 406	RJA0053-3X	AC CORD	1	(GC)
⚠ 406	K2CA2CA00020	AC CORD	1	(GK)
⚠ 406	K2CQ2CA00006	AC CORD	1	(GC)
411	VFC3877	SHOULDER BELT	1	
412	VEQ4500	REMOTE CONTROLLER	1	
413	VPN5880	MIC PAD	1	
415	VFK1451	HEAD CLEANER	1	
416	VFA0446	DC/AV/S CABLE SET	1	
417	VFC3954-2	HOOD U	1	
■	M6	M6_GAISO		
501	VXA8014	MECHA. CHASSIS	1	
501-4	VXR0403	T REEL U	1	
503	VXA7932	CASETTE UP U	1	
503-1	VMB3766	CASSETTE UP SPRING	1	
503-2	VMB3766	CASSETTE UP SPRING	1	
504	VEG1663	CYLINDER U	1	
B501	VHD1632	SCREW	1	
B502	VHD1757	SCREW	1	
B503	VHD1757	SCREW	1	
B504	VHD1757	SCREW	1	
B505	VHD1754	SCREW	1	
B506	VHD1754	SCREW	1	
B507	VHD1755	SCREW	1	

S7. Exploded Views

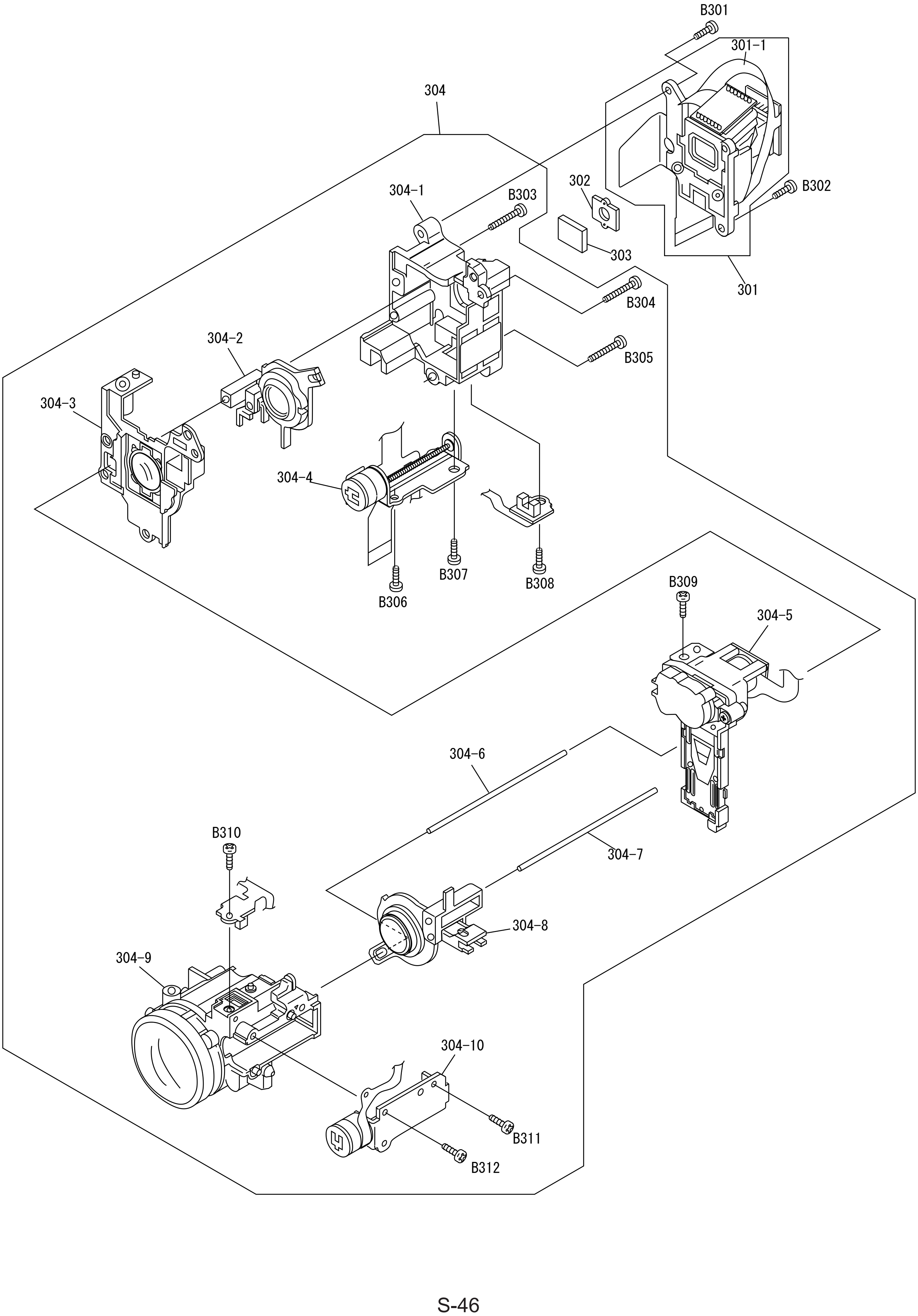
S7.1. Frame & Casing Section (1)



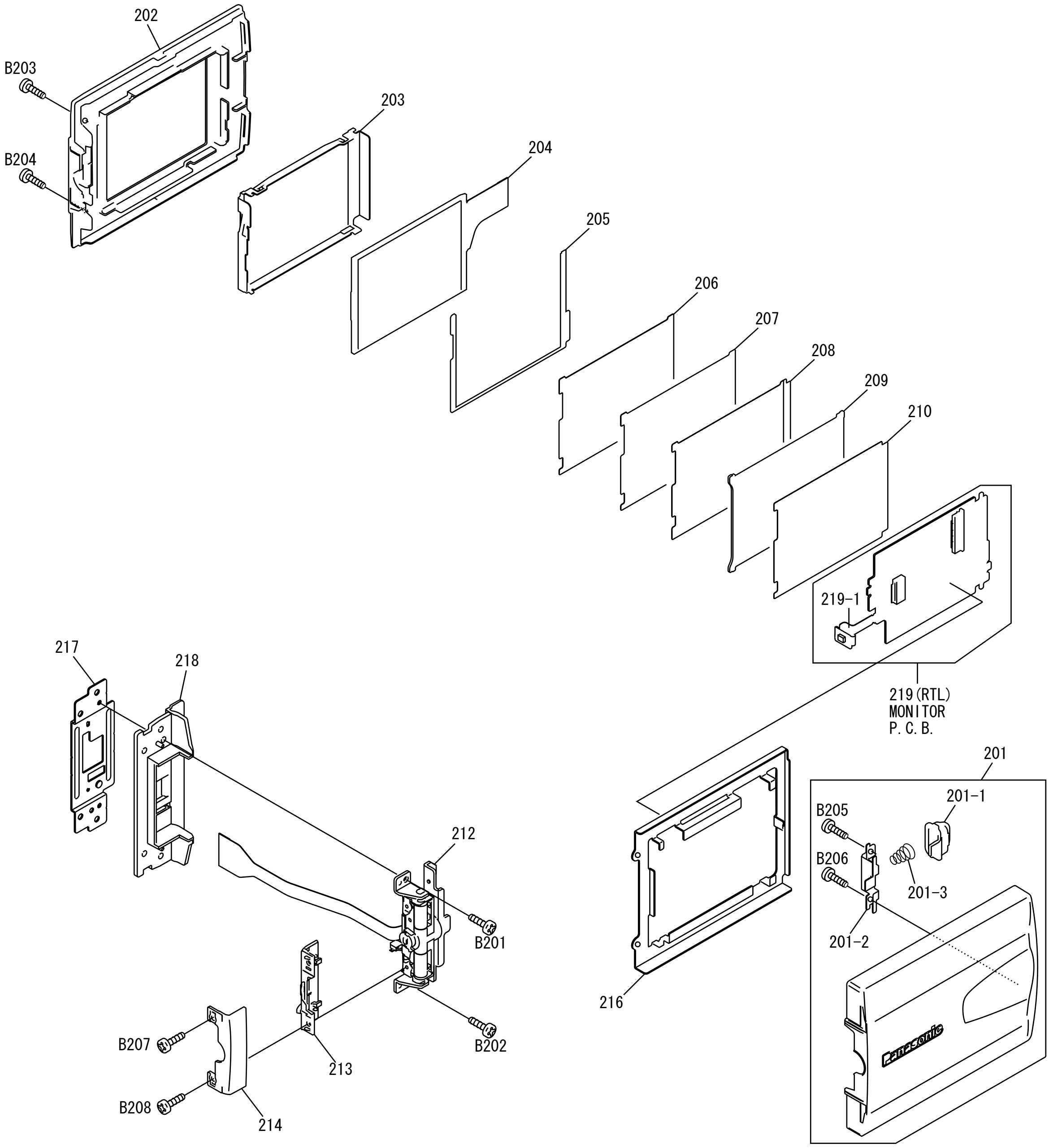
S7.2. Frame and Casing Section (2)



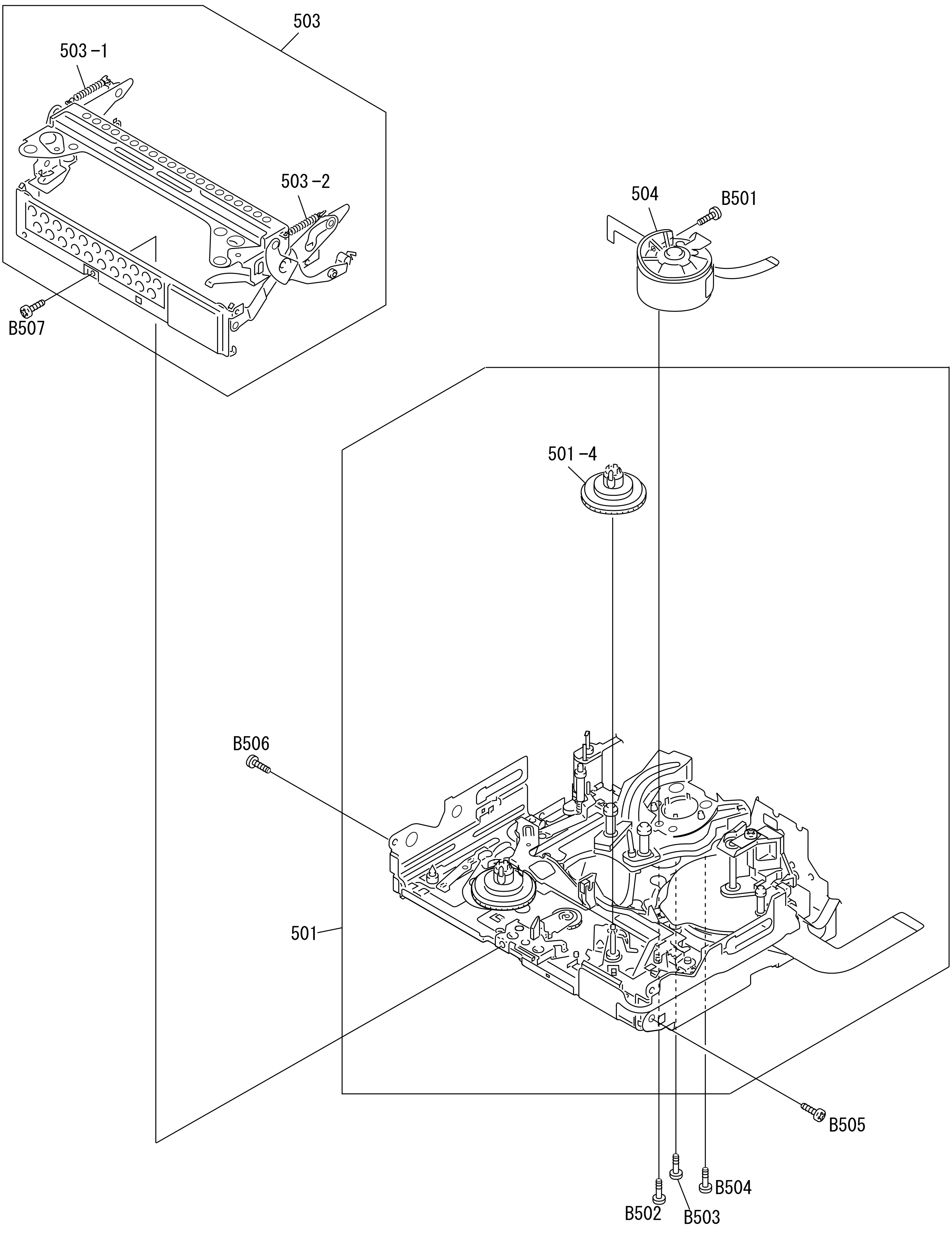
S7.3. Camera Lens Section



S7.4. LCD Section



S7.5. Video Mechanism Section



S7.6. Packing Parts and Accessories Section

